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ORIGINAL ARTICLES.

THE USE OF ANTITOXIC SERUM FOR THE PREVENTION OF DIPHTHERIA.

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GREAT interest was aroused about one year ago by the announcement of the discovery in diphtheria-antitoxin of a specific remedy for the treatment of diphtheria, and there has been but slight abatement of the interest in this agent since that time. Comparatively little attention, however, has been paid to its value in the prevention of diphtheria, and the few reports of its use for this purpose published in Europe have been inconclusive or disappointing.

The antitoxin produced by the New York City Health Department has been employed for the immunization of a large number of children both in public institutions in this city and in private families, under conditions particularly favorable for demonstrating its exact value, and the results have been in many respects very remarkable. It has been employed in public institutions both to control outbreaks of diphtheria and as a routine measure to protect inmates when there was evidence of possible or previous exposure to disease.

Brief reports of the results obtained in the New York Infant Asylum (Dr. Peck) and in the Nursery and Child's Hospital (Dr. Thomas) have already appeared.

The serum employed in all of the cases referred to in this report was produced by the New York Health Department, with the exception of that used at the New York Infant Asylum in January. The amount employed in each case has varied from 50 to 600 antitoxin-units, depending upon the age of the individual. Behring recommended in November last that 150 units should be employed for immunization, but added that in persons already infected and near the end of the incubation-stage, even 600 units might not entirely prevent the disease, as then it became a remedial agent and not a prophylactic.

Unfortunately the period of incubation of diphtheria is not known. It is, however, of short duration and probably does not ordinarily exceed 48 hours. As to the period of protection following the immunizing injections of the antitoxin, Aronson thinks the protection lasts from 3 to 4 weeks; Kossel, from 2 to 3 weeks; while our observation seems to show that it is usually at least 30 days.

EXPERIENCE AT THE NEW YORK INFANT ASYLUM.

From May, 1892, to February 18, 1894, no cases of diphtheria occurred in this institution, which ordinarily has about 400 inmates. From February 18 to September 1, 1894, there were 22 cases of diphtheria and 15 deaths. In September there were 16 cases, and from this time to January 16th (108 days), 107 cases of diphtheria occurred. These were very evenly distributed over this time, about 30 cases developing in each month. In the latter part of October systematic bacteriologic examinations of the throats of the healthy children showed that diphtheria-bacilli were present in so large a number that, in order to isolate these, nearly one-half the inmates were quarantined.

All efforts directed to checking the progress of the epidemic were unattended with success up to the time that the antitoxin was employed for immunization of the inmates. On January 16 and 17, 1895, 224 children were immunized with Behring's antitoxin No. 2. The quantity given to each child varied from 100 to 200 antitoxin-units, according to the age. From this date, January 16th to February 15th, only one case of diphtheria occurred. It appeared on February 3d and was of very mild type. On February 15th, 30 days after the administration of the antitoxin, a second case appeared, and from February 15th to February 28th five more cases developed, one on the 22d, one on the 24th, two on the 25th, one on the 27th. On the latter date, February 27th, the antitoxin was administered again to 245 children. The antitoxin in this instance was that produced in the laboratory of the New York City Health Department, and the dose administered to each child was increased 25 units throughout. No more cases of diphtheria occurred for 31 days.

On March 30th a case of mild diphtheria appeared in one of the children that had been immunized on February 27th. Cultures made from children in the same ward in which this case developed showed that in the throat of six there were typical Loeffler bacilli; each of these six children received then a third dose of 200 units of the same antitoxin on April 3d. Twelve days after this injection one of these children became slightly ill; a small patch of false membrane was found in one tonsil, the maximum temperature (which lasted only about 24 hours) was 100° F., and bacteriologic examination

of the throat-secretions showed typical diphtheria-bacilli.

On April 18th, a child immunized on February 27th developed mild diphtheria complicated with severe bronchopneumonia; this case proved fatal, apparently as a result of the bronchopneumonia. On May 3d, a fourth case, very mild in character, appeared in one of the children immunized February 27th (66 days), and a fifth case, also mild in character, occurred on May 27th, 90 days after the immunization. No further cases developed. During this same period three cases of diphtheria occurred among children not immunized, who had been admitted subsequent to February 27th. Two of these died; none of them received antitoxin.

As contrasted with 107 cases in 108 days before the first immunization, there occurred five cases of mild character in 112 days after the second immunization. Reports from the house-physician, Dr. Peck, to whom I am indebted for these notes, show that, excepting a few mild skin-rashes, no bad effects followed the administration of the antitoxin in any case. Since May 27th the institution has been free from diphtheria.

EXPERIENCE AT THE RECEPTION-HOUSE OF THE NEW YORK JUVENILE ASYLUM.

The inmates vary from 8 to 15 years of age, are admitted and kept under observation in the reception-house for about 3 weeks and are then transferred to the main institution. Admissions average about two daily.

During two months previous to April 13, 1895, there were 12 cases of diphtheria in the house; three occurred during the week immediately preceding April 13th; on that date 27 children were immunized with the antitoxin, each one receiving from 150 to 250 units. On April 27th antitoxin was administered to 10 more, in the throats of 7 of whom diphtheria-bacilli were shown to be present. The injections were continued at intervals as new children were admitted. The total number treated was 81. No cases of diphtheria occurred among those immunized, but two cases developed in children admitted about May 1st, who had not been immunized, and a short time later one of the attendants who had not been immunized developed diphtheria. These cases furnish conclusive evidence of the continued presence of infection in the institution.

EXPERIENCE AT BELLEVUE HOSPITAL.

About May 1st, a case of diphtheria developed in a child in Ward 7. On May 7th a second child was taken ill. Both of these children had been in the hospital for more than 2 months, and no diphtheria had occurred in this ward for many months previously. Bacteriologic examination of the throats of 11 children remaining after the second case was removed showed that in 6 diphtheria-bacilli were present; these were immunized, about 200 antitoxin-units being administered to each. No more cases of diphtheria appeared. Three weeks later examination of the throats showed that all were free from diphtheria-bacilli.

EXPERIENCE AT THE NURSERY AND CHILD'S HOSPITAL.[1]

Diphtheria appeared in this institution on January 18th; 46 cases occurred between January 18th and April 18th, of which 15 occurred between April 1st and April 18th, showing that the epidemic was steadily increasing up to the day of immunization. On April 18th, 110 children were immunized with serum furnished by the Health Department, and on April 29th the remainder, 26 in number, were immunized. Of these children, 77 were under one year of age and 59 were between one and four years of age. The dose administered to each varied from 50 to 200 units of antitoxin. Careful observations were made in each case as to the occurrence of albuminuria, elevation of temperature, and remote secondary lesions, with the following result: Four showed faint traces of albumin in the urine, lasting in no case more than 4 days and unattended with any symptoms pointing to disturbance of the kidneys. In 7, rashes occurred 8 or 9 days after the injection; these were not attended with any other symptoms. Immediately after the injection (within 12 hours) some cases showed elevation of temperature, *i. e.*, in 7 cases to 100° F., in 32 cases to 101°, in 16 to 102°, and in 4 to 103°. In all these children, however, the temperature had virtually returned to normal within 24 hours.

The amount of disturbance, as manifested by elevation of temperature, crying, restlessness, etc., seemed to be proportionate to the youth of the children and to the degree of debility. Stronger and older children showed little reaction.

No case of diphtheria occurred in the hospital among the children immunized, but 3 weeks later one of the assistant physicians, who had not been immunized, developed diphtheria, and 5 weeks later one of the nurses became ill. Both of these cases showed well-marked membrane on the tonsils and pharynx and bacteriologic examination demonstrated the presence of diphtheria-bacilli in the throat-secretions.

EXPERIENCE AT THE HOUSE OF RECEPTION OF THE NEW YORK CATHOLIC PROTECTORY.

The reception-house of the New York Catholic Protectory receives the children of destitute parents,

[1] I am indebted to Dr. A. M. Thomas, visiting physician, for these notes.

keeps them for three weeks, and then transfers them to the Protectory proper at Westchester, New York.

On Sunday, July 7, 1895, 2 cases of diphtheria developed in the institution. On the following day 2 more cases appeared, and on Tuesday, July 9th, a fifth case; 5 cases of diphtheria had thus appeared in three days.

On July 9th and 10th, 67 children then in the institution were immunized. The ages of the children ranged from 2½ to 15 years.

The size of the dose was graded as follows:[1]

2½ to 5 years . . .	150 to 300 units.
6 " 10 " . . .	400 units.
11 " 15 " . . .	500 to 600 units.

Each child's temperature was taken morning and evening for two days after the injection. There was in three or four a slight elevation of temperature, which subsided in each within two days. In several instances, an erythematous patch, varying in size from one to four inches in diameter, appeared within two or three days about the needle-puncture. Only one of these caused any discomfort, and this promptly subsided upon the application of a wet 1:60 phenol dressing. Unfortunately it was impossible to secure specimens of urine before the administration of the antitoxin, but after the administration, on July 11th, specimens were obtained from all the children treated. Examinations gave negative results in all but ten cases. In these, more or less albumin was found on one or more examinations and then entirely disappeared. No after-effects, except the albuminuria as described, were observed. Two or three of the children, after about 10 days, showed a few erythematous blotches upon the skin, more or less generally distributed, but these lasted only a few hours. No cases of diphtheria developed after immunization among those treated.

In addition to these 67 children, a few days later one of the attendants and his two children were also immunized. None of these showed albuminuria, local symptoms, or urticaria.

On August 5th, diphtheria developed in a child that had been admitted the day previously. The source of infection was unknown. At this time none of the children was in the house that had been there when the first general immunization was practised.

On August 9th, the physician in charge requested that the new inmates be immunized. Directions were at once given to obtain specimens of urine from all the children for examination before the administration of the antitoxin. On August 10th, the 37 inmates were immunized in the same manner as before. These children averaged older than those previously treated. Most of them were from 11 to 14 years of age, only 7 being under 10 years.

The dosage was graded as follows:

2 years . .	1 case . .	200 units.
3 " . .	1 " . .	250 "
6 " . .	1 " . .	350 "
7 to 12 years .	20 cases . .	400 to 500 units.
13 to 20 " .	14 " . .	500 to 600 "

The injection having been made in the forenoon, most of the children showed temperatures of from 99° to 99.5° the same evening, two or three reaching 100° and one 100.6°. During the two days on which observations were made most of the temperatures subsided to normal, a few remaining at 99°. No cases except those mentioned later showed any constitutional symptoms after the injections.

In only two cases was there any local irritation. In one of these the symptoms promptly subsided without treatment; the other, unfortunately, developed an abscess. This case was a fifteen-year-old boy who had received 600 units, under exactly the same antiseptic precautions as were employed in the other cases; he complained the next day of soreness, pain, and swelling in his thigh. The symptoms increased in spite of the local application of wet phenol dressings; and on August 15th he was removed to the New York Hospital, where a large abscess was evacuated. It is difficult to understand how the infection took place, inasmuch as the children that were injected immediately before and immediately after him in the same manner, and with serum from the same horse, showed no reaction whatever.

In the last group of cases, 37 in number, specimens of urine were obtained before the injections to compare with those taken after the administration of the serum. The results of the examinations are as follows:

	Before immunization. August 9th.		After immunization. Aug 11th.		Aug. 13th.
	Sp.gr.	Albumin.	Sp.gr.	Albumin.	Albumin.
Felice Ferolo,	1022	Trace.	...	Negative.	Negative.
Patrick Donovan,	...	Negative.	1030	Trace.	"
Jos. Dillon,	...	"	...	"	"
Francesca Viria,	...	"	...	5 p. ct.	"
Annie De Borger,	1024	30 p. ct. in vol.	...	60 "	"
Jennie De Borger,	...	Negative.	...	16 "	"

One child showed 30 per cent. in volume of albumin (the urine, after boiling and the addition of nitric acid, was allowed to stand for 24 hours, and the amount then estimated) in the urine before the treatment, and after the injection about 60 per cent. in volume. The urine from the sister of this child showed no albumin before the injection, and 16 per cent. after it. Neither of these children gave the slightest evidence of illness other than the albuminuria at any time, and neither showed any

[1] The doses administered to these children are larger than required and are larger than it is desirable to use.

temperature-reaction. In both of these cases, as in all the others, the albumin had entirely disappeared two days later.

Nine days after the injections, one case developed an urticaria which lasted for 24 hours. No other cases showing skin-rashes were observed.

On August 10th, the day following the immunization, Annie Brady, 12 years old, a sister of the child that developed diphtheria on August 6th, complained of sore-throat, and had a temperature of 101°. She had received the day before 500 units of the antitoxin. When seen on August 10th, she presented the clinical appearance of a mild case of left-sided follicular tonsillitis. Only a few white spots, easily rubbed off, were seen in the mouths of the follicles; no membrane whatever was visible, but a culture demonstrated the presence of Loeffler bacilli. The temperature, 101° on the first day, was at no time thereafter higher than 99°, and within two days the throat presented a perfectly normal appearance. She was kept isolated, and cultures taken every two days up to September 9th all showed the presence of Loeffler bacilli. It is an interesting question as to whether this was a case of simple tonsillitis in which the diphtheria-bacilli chanced to be present in the throat, but were not active, or whether it was one of true diphtheria, so modified by the anticipating effect of 500 units of the antitoxin as to display none of the clinical appearances of the disease.

On August 20th, May Brady, a second sister of the child removed with diphtheria, developed sore-throat, and was promptly isolated. On the 21st, examination disclosed congestion of the whole throat, with a few spots in the mouths of the follicles of the left tonsil. The appearance and symptoms were like those of the preceding case, only still milder. Culture failed to show the presence of Loeffler bacilli. No other cases of diphtheria or sore throat developed.

IMMUNIZATION BY HEALTH-DEPARTMENT INSPECTORS IN INFECTED FAMILIES.

For some months past in families in which diphtheria has occurred, and in which there were other children exposed to infection, the Department Inspectors, acting on their own judgment as to the necessity, have immunized some of these exposed persons. Most of these cases have been among the tenement-house population. A few cases taken at random from the reports of the inspectors illustrate the method:

FAMILY 1.—Five children in family; two cases of diphtheria; the other three children, aged 9, 11, and 13 years, were immunized; no further cases occurred.

FAMILY 2.—Three children in family; one case of diphtheria; two other children, aged 8 and 16 years, immunized, one child had diphtheria-bacilli in the throat at the time. No further cases of diphtheria.

FAMILY 3.—Three children in family; one case of diphtheria, one of the remaining two children immunized; second child, aged 16, not immunized. This child developed diphtheria three weeks later, and was successfully treated with the antitoxin.

Cases like the foregoing might be repeated almost indefinitely; 232 persons had been immunized in this way up to October 1st, and of these, at least 93 (many of the others were not examined bacteriologically before being immunized) had diphtheria-bacilli present in their throats when treated. The cases were kept under observation until the premises had been disinfected, and this was not done until the throats of all were free from bacilli.

	No. of cases immunized.	No. of units of antitoxin administered.	No. of cases of diphtheria developing among those immunized between 1 and 30 days.	No. of cases of diphtheria developing within 24 hours.	No. of cases of diphtheria developing after 30 days.	No. of cases of diphtheria that occurred in the institutions previous to immunization.
New York Infant Asylum (1st immunization)	224	100 to 200	1 mild on the 19th day.	0	6	107 cases in 108 days.
" " " " (2d immunization)	245	125 to 225	1 mild on the 12th day.	0	4	6 cases in 12 days.
Nursery and Child's Hospital	136	50 to 200	0	0	0	46 cases in 90 days. 15 cases in 15 days.
New York Juvenile Asylum	81	150 to 250	0	0	0	12 cases; 3 cases in 2 days.
New York Catholic Protectory	114	150 to 600	0	1	0	5 cases in 3 days.
Bellevue Hospital	11	175 to 225	0	0	0	2 cases in 10 days.
Health Department Inspectors	232	150 to 250	1 mild on the 19th day.	3	3 { 1:30 1:31 1:55	One or more cases in more than 90 families.
Total	1043	.....	3	4	13	

Among these 232 persons, three developed membranous croup within 24 hours of the time when they were treated; all recovered. Three others had mild pharyngeal diphtheria, developing one on the 19th, one on the 30th, and one on the 31st day after injection, and one developed a fatal diphtheria on the 55th day.

The cases detailed number altogether 1043; 224 of these were immunized twice; the first time with Behring's serum, and the second time with the New York Health Department serum. In a large percentage of the whole number diphtheria-bacilli were present in the throat when the serum was administered, and all had been exposed to diphtheria under conditions more or less favorable for the transmission of the disease. Among those immunized 3 cases of diphtheria occurred between 1 and 30 days after the treatment; *i. e.*, one on the 12th, one on the 17th, and one on the 19th day, respectively. Twelve cases developed diphtheria later, as follows: On the 30th day, two; 31st day, one; 33d day, one; 37th day, one; 39th day, one; 40th day, two; 42d day, one; 52d day, one; 55th day, one; 66th day, one; 90th day, one. The four cases that developed croup within 24 hours of the injection undoubtedly had the disease at the time of injection. Altogether, therefore, excluding these, 16 cases of diphtheria occurred among 1014 persons—three in from 1 to 30 days, and 13 in from 30 to 110 days after immunization. These cases were all mild, excepting two, one of which proved fatal from diphtheria, and in the other death seemed to be due to bronchopneumonia complicated by a mild diphtheria.

During 90 days preceding immunization, under practically the same conditions, it may be said that more than 225 cases of diphtheria occurred. By the use of the antitoxin it has been possible to stamp out completely diphtheria in four great institutions for the care of children in which it was prevailing in more or less epidemic form. In no instance has there been, so far as can be determined, any serious results from the administration of the remedy for this purpose.

The duration of immunity in many cases is apparently not more than 30 days, but it may be for a much longer period. The doses required to confer immunity are probably between 50 and 300 antitoxin units according to the age of the individual treated.

DIAGNOSIS OF RENAL CALCULUS IN WOMEN.

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IT becomes more and more evident with the increasing frequency of operations upon the kidney that serious errors in the diagnosis of renal calculus are often committed. Not infrequently a patient who has a persistent pain in the lumbar region, blood or pus in the urine, or a retroperitoneal lumbar tumor, is operated upon for calculus of the kidney, and the operation fails to demonstrate the existence of the stone.

I have seen repeated failures where all these signs existed in the same patient and had persisted for a long time.

The presence of pus in the urine is one of the most characteristic signs of calculus in the pelvis of the kidney, but from the mixed urines of the bladder it is impossible to say from which side the pus comes; or, if pain and swelling point distinctly to one side, it cannot be asserted after any ordinary examination that the other side is not affected too.

In so far as pus is diagnostic of the presence of a stone in the kidney, and it is one of the most characteristic factors, though by no means pathognomonic, I have been able to simplify the matter by my method of catheterization of the ureter under a direct inspection, the bladder being distended with air by the posture of the patient. In order to secure a sufficient quantity of urine for satisfactory examination, it is necessary to leave the catheters in the ureters anywhere from a quarter of an hour to several hours. I found that flexible catheters were better for this purpose than the metallic ones that I had been previously using. I therefore had a series of catheters made, 2, 2¼, 2½ mm. in diameter, and 30 cm. (12 in.) long, constructed of woven silk, coated with many layers of shellac, and with a highly polished outer surface. The end of the catheter is blunt and conical, and has a large oval eye 2 cm. back of the extremity. In a warm room the catheter is often too flexible to be introduced into the ureter and it coils in the bladder; this difficulty is overcome by stiffening it with a wire stylet, when the point of the catheter is placed within the ureteral orifice, and then the catheter is simply pulled off the stylet, which is held rigidly as the catheter passes up the ureter. By means of catheters introduced one on either side the urines from the right and left kidneys are collected in separate test-tubes held in two auger-holes bored in a block of wood that is placed in the bed between the patient's legs. The right side must be carefully marked by a piece of string or some other device to prevent confusion.

An analysis of these urines, with the microscopic examination, then shows the presence of pus on one or both sides, and the amount of urea in each indicates the working coefficiency of the kidney.

With the knowledge gained by this sort of examination of the two sides, the operator is posted as to the amount of risk he incurs in operating upon one of the kidneys. He also knows what risk he runs in removing a crippled kidney, if he is tempted to do so by the amount of disease found.

In addition to this indispensable means of diagnosis, I have recently been able to add two other signs of absolute certainty that are applicable in a large number of cases of renal calculi.

FIG. 1.

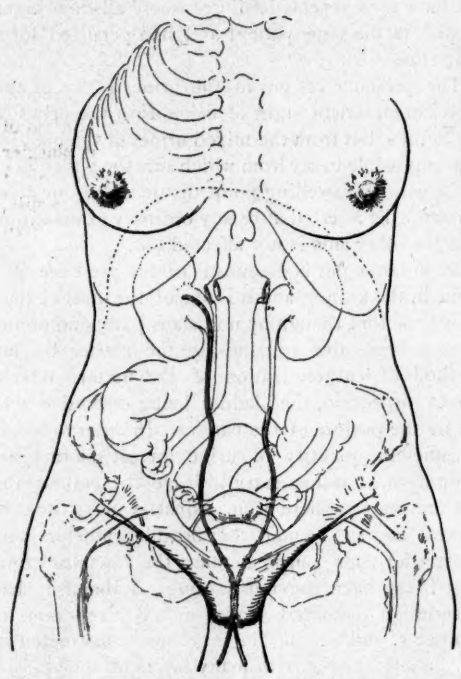

Diagram of ureters and kidneys, with a flexible ureteral catheter introduced just above the superior strait and draining the left kidney; on the right side a flexible renal catheter has been introduced and the extremity lies in the pelvis of the kidney. The ends of both catheters project from the urethra.

For the purpose of this examination I use renal catheters and renal bougies. The renal catheters vary in diameter from 1¾ to 2½ mm., and are 50 cm. (20 in.) long. In all other respects they are like the ureteral catheters already spoken of. The catheter is used in the following way: The ureteral orifice is exposed and the catheter introduced, say No. 2 or 2¼, and pushed gradually on upward until resistance to further advance is felt. In general about from 13 to 17 cm. (6 to 7 in.) of the catheter is left projecting from the urethra. Then taking an air-tight syringe with a tapering metallic point, and connecting it by means of a piece of fine rubber tubing with the end of the catheter, strong suction is exercised. If there is any pus present, this is often brought at once down into the syringe, and begins to flow long before it would naturally without suction. The suction is continued until the renal pelvis is emptied, and the fluid obtained is placed in a conical graduate for careful examination.

In three cases I have been able to diagnosticate the presence of renal calculi by discovering in this fluid a minute, dark-brownish or blackish sediment consisting of little pieces of material about a half-millimeter or less in diameter. On placing these under the microscope and testing them they were found to be composed of uric acid. Their appearance on the surface was mammillated, looking like an aggregation of little masses of rounded stone. On pressing them with a needle-point they were found to be quite coherent, each separate particle bending and breaking under pressure.

The first case in which the diagnosis was made in this way was the following:

CASE I. *Miss S.; several black specks withdrawn from pelvis of kidney by suction. Microscopic and microchemic examination showed them to be masses of uric acid. Operation; renal calculus; recovery.*— The patient, Miss S., aged 29, had spent not less than 10 years in treatment, principally at the various university towns of Europe, where she could secure distinguished counsel. She finally came to me through the courtesy of my friend, Dr. Max Koehler, of Cincinnati. She was of slight build, weighing 106 pounds, and complained of indigestion, a sense of pressure in the abdomen, headache, and irregular bowels. The discomfort she felt in the abdomen was located chiefly on the right side, but no tenderness, pain, or enlargement could be found out by palpation. The urine had also persistently contained pus for 10 years, and on two occasions she had passed some blood. Among others, she had seen Prof. Ultzmann and Prof. Czerny, of Heidelberg, who had diagnosticated a catarrhal pyelitis.

She dated her ailment from a chill taken at a ball, during menstruation, and stated that after this time the urine was affected.

FIG. 2.

Stone found in the pelvis of the right kidney (Case I), diagnosticated by the flexible renal catheter and removed by lumbar section.

On examination, I found the uterus and the pelvic organs normal in size and position. The urine contained pus and a bacillus resembling the colon-bacillus. I placed the woman in the knee-breast position and passed a small speculum into the bladder, and distended it atmospherically, so that all of the bladder-wall could be well seen; this was found to be healthy. I found by catheterizing the uterers separately that the left side secreted normal, clear urine, entirely free from pus; but when the catheter was passed up to the pelvis of the right kidney, 3 or 4 cc. of turbid urine escaped, which under culture developed the colon-bacillus. The fact that there were several cubic centimeters of urine found in the pelvis of the kidney each time showed that there was a stoppage at the juncture of the ureter with the renal pelvis. Ordinarily, in two minutes' time 13 cc. of urine were discharged from the right

kidney, while under normal conditions the flow should not be more than 1 cc. I was never able at any time to trace the source of infection. The final result of the treatment showed that it was not due to any communication with the bowel.

I began treatment by introducing the renal catheter and washing out the pelvis of the kidney, and did this more than 100 times. At first there was some slight improvement, but later the trouble persistently grew worse, the pus increasing in quantity and becoming quite thick. The injections used were at first boric acid; a few times weak solutions of silver nitrate, and, finally, solutions of mercuric chlorid, beginning with a strength of 1 : 100,000, and gradually reduced to 1 : 5000. This was kept up throughout the winter of 1894–95.

On two occasions upon emptying the pelvis of the kidney by strong suction, applied at the end of a catheter by means of an air-tight syringe connected with it by a short piece of thick, rubber tubing, I found in the bottom of the conical glass receiver several minute, black specks not over a half-millimeter in diameter. On putting these under a microscope, they turned out to be little masses of uric acid, holding firmly together, and only crushed with some difficulty by the point of a needle. At no time had any similar pieces been found in the urine passed in the usual way. On the basis of this find, associated with the fact that it was impossible to clear up the urine coming from the pelvis of the kidney, I concluded that the patient had a stone in the pelvis.

I operated March 30th, removing a small, black, rough, uric-acid calculus, 11 x 16 mm., shown in Fig. 2, natural size. The kidney was brought out through a lumbar incision, the renal pelvis opened posteriorly, and the stone was found lying in the lower part of the pelvis over the ureteral opening. After its removal, the pelvis was closed by suture with catgut. Before closing, the ureter was palpated and found normal down to the pelvic brim. The abdominal incision was closed down to a small opening in the loin left for a gauze-drain.

The patient recovered rapidly, and the urine cleared up completely. When she left my care early in June there was absolutely no pus in it, and, on catheterizing the kidney for a final examination through the bladder and ureter it was proved that clear urine was secreted in the normal manner, and all trace of the stoppage at the junction of the ureter with the pelvis had disappeared.

CASE II. *Malignant disease of the right kidney; hydronephrosis of low grade; bits of renal calculus brought away by suction applied through the renal catheter.*—The patient had a large right kidney, either carcinomatous or sarcomatous. I found upon carrying the renal catheter up into the pelvis that about 10 cc. of clear urine escaped at once, and on putting on strong suction some fine, black granules were brought down which, under the microscope, appeared exactly like those just described in the case of Miss S. The percentage of urea, estimated from urine drawn from the sound side, was 1.7, while in the urine from the diseased side it was only 0.7. The patient's condition did not admit of any operative interference, and nothing was done.

CASE III. *Calculous pyonephrosis; diagnosis made by the renal catheter bringing away pieces of stone; a large piece caught in the eye of the catheter; scratch-marks on the end of the catheter.*—The third case came to me from Chicago, referred for diagnosis by the courtesy of my friends, Dr. N. S. Davis, Jr., and Dr. Fernand Henrotin. The patient was about 46 years of age, and suffered from a persistent pyuria of

FIG. 3.

Sediment drawn down in Case III, August, 1895. The larger masses are tissue-débris. The minute granules are detritus of a calculus.

doubtful origin. I passed a renal catheter into the pelvis of the kidney, and by means of strong suction brought down at once a small quantity of urine mixed with abundant pus. A quantity of fine, granular, amorphous débris shown in the sediment in the figure came down with it, and interspersed with this were some small, blackish particles looking like grains of pepper. (See Fig. 3.) These under the microscope were found to be little, brownish masses of uric acid.

FIG. 4.

FIG. 5.

Fig. 4. Stone caught in eye of catheter. Natural size.
Fig. 5. Free broken-off surace of the same stone, magnified 18 times.

On withdrawing the catheter an irregular piece of stone, a millimeter in diameter, was found wedged in the eye as shown in Fig. 4. On putting this under the microscope, under a low power, one surface was found to be discolored black and to be mammillated, and made up of a number of little rounded elevations set together with shallow sulci

between them. The opposite surface, however, was of an entirely different color, being of a light buff, and it was broken, jagged, and crystalline, with sharp ridges. (See Fig. 5.) It was therefore evident

FIG. 6.

End of catheter hammered down and scratched. Magnified.

that this piece had been freshly broken off and drawn into the eye of the catheter by the suction.

In addition to this conclusive evidence of the existence of a stone in the pelvis of the kidney, I

FIG. 7. FIG. 8. FIG. 9.

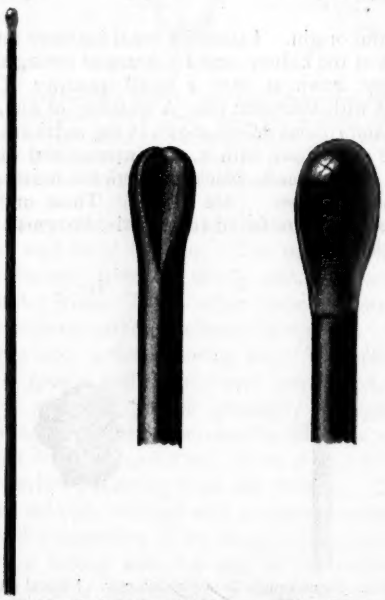

Fig. 7. Rubber bougie tipped with wax. Natural size.

Fig. 8. Hard-rubber bougie, showing groove. Enlarged four times.

Fig 9. Rubber bougie tipped with dental wax. Enlarged four times. The clear spot is the reflection of a window on a smooth surface.

found further confirmatory evidence of the most satisfactory sort upon withdrawing the catheter and putting the end under a weak magnifying power. The smooth, hard, varnished surface was chipped off on one side, and the smooth, round end was hammered down and irregular, as shown in the annexed figure, demonstrating that it had been brought into violent contact with a hard surface.

I had already thought of making a diagnosis in this way. I had made last spring a hard-rubber renal bougie, 2 mm. in diameter, with an olive point, 3 x 2 mm., notched on two sides, the notch running lengthwise; to use this, I melted some dental wax and coated the end of the bougie with it, giving it a smooth, glossy, impressionable point, which is not altered by any kind of contact with the soft tissues, but is easily scratched by a stone. (See Figs. 6, 7, 8, and 9.) I did not happen to have this at hand at this examination, and so made the diagnosis, as stated, with the catheter alone. I expect the bougie to prove more serviceable than the catheter in the future.

This patient has not yet been operated upon, but the diagnostic factors detailed leave no doubt as to the condition in the pelvis of the kidneys.

To recapitulate, I have been able by means of these cases to establish the following points:

1. By renal catheters to demonstrate a unilateral or a bilateral pyelitis and the grade of each.

2. By suction at the outer end of the catheter to bring down bits of stone for microscopic and microchemic examination.

3. The color of these pieces of stone signified a long retention in the pelvis of the kindey.

4. A piece of stone, black and rounded on one side, and light-colored and jagged on the opposite, was evidently broken off from a larger calculus and caught in the eye of the catheter by friction and suction.

5. The bruised end of the catheter was conclusive evidence of violent contact with a hard body.

RECENT EXPERIENCES IN THE SURGERY OF THE HYPERTROPHIED PROSTATE.

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I HAVE so lately reviewed this whole subject (*Annals of Surgery*, July, 1895) that it now seem, worth while merely to bring the existing evidence up to date and submit it to the profession. I am the more interested in doing this for the reason that I am in constant receipt of letters of inquiry from physicians as to the present status of the operation.

I need not recapitulate any of the historic or theoretic portions of the preceding paper, and I have no new facts bearing upon the value of the removal of one testicle in prostatic cases.

If the 3 deaths contained in this series (Kummell Bangs, Keyes) are added to the 20 contained in the previous list, it makes the present known mortality 17.9 per cent., or about what it was before. But

following the plan I then adopted and throwing out the obviously inappropriate cases, those of Bangs and Keyes may be excluded, as the former had pronounced against the operation and the latter says he was "over-persuaded" into its performance. Of the details of Kummell's fatal case I have no information, but if it is included among those in which there was a reasonable expectation of recovery from the operation, it makes 8 deaths in 120 cases, a mortality of 6.2 per cent.

This certainly compares favorably with the mortality-records of all other forms of operative treatment of prostatic hypertrophy, while the degree of relief experienced and the percentage of cases that may fairly be called "cures" are both far in advance of the results obtained by other methods.

To the 111 cases contained in the table already published 24 new cases are to be added.

CASE I reported by Lütken in the *Deutsche medicinische Wochenschrift*, January 31, 1895, was inadvertently omitted from my table published in the July *Annals of Surgery*. A man, aged 65 years, had difficulty in passing urine for several years. The catheter had to be used seven or eight times daily, which of late caused great pain and occasionally free hemorrhage. Digital examination revealed a prostate about the size of a hen's egg. As no improvement followed the usual methods of treatment castration was recommended and accepted. Ten days after the operation the left half of the gland was found to have decreased in size. A month later this half had almost disappeared and the other side was about the size of a walnut. Four months later no enlargement of the prostate could be detected. Immediately after the operation the catheter was used less frequently than before, and at the end of ten days was discarded entirely. The patient five months after the operation was perfectly well and could pass a good-sized stream of water. The author prefers this operation to other methods of treatment and even to regular catheterism. No living spermatozoa could be found in the testes, which argues against the view that these organs must be functionally active in order to get shrinking of the prostate after castration.

CASE II.—Swain (*British Medical Journal*, January 5, 1895) reported an interesting case which was also accidentally omitted from my table. He operated on a patient 73 years of age with a typical prostatic history. The man had had several attacks of retention; catheterism was becoming increasingly frequent and painful, and when he came under observation was for a time impossible, aspiration above the pubes being employed for two days. Mr. Swain continues the description of the case as follows:

"On the third day I succeeded in passing a metallic prostatic catheter, which traversed the urethra for 9½ inches before the urine began to flow; the considerable depression of the handle which was necessary suggested that the middle lobe, as well as the lateral lobes, was much enlarged. For about ten days his bladder was irrigated night and morning with boric-acid lotion, and, although the urine then contained very little blood and was less fetid, the prostate did not diminish in size, and the patient was getting gradually worse. The kidneys were presumably healthy, as the total amount of urea excreted daily was about normal. After the matter had been fully explained to the patient, I performed double castration on September 11th. In consequence of the decomposition of the urine it was necessary to continue the irrigation of the bladder for three weeks after the operation; but on the seventh day the patient passed a small quantity of water of his own accord, and this gradually increased in amount, so that when the washing out of the bladder was stopped he passed all his urine naturally. Coincidently with this his general condition improved, and the prostate gradually became smaller.

"There was a perceptible diminution in the size of the prostate at the end of the first week after operation, but in the third, fourth, and fifth weeks the increasing atrophy appeared to progress more rapidly. In three weeks after operation the patient began to get about, and in five weeks he was discharged. At this time his general condition had much improved; his urine was normal, he sometimes passed half a pint at a time, but he could not hold his water for more than four or five hours in the daytime. There was no 'residual urine' in the bladder; the prostate was comparatively soft and about the size of a large horse-chestnut. If a catheter was introduced, it passed easily, and urine began to flow along it when a distance of 8 in. from the orifice of the urethra had been reached without any more depression of the handle than is usual.

"I saw the patient on December 11th, 13 weeks after operation, and found that since his discharge he has not once had to use a catheter or to get up at night to pass water, and is now free from any difficulty in emptying his bladder, and the urine is normal in appearance and has no bad odor. On rectal examination, the prostate was felt to be rather smaller and firmer than at the last examination."

CASE III.—Dr. Edward Boeckman, of St. Paul, Minnesota, tells me in a letter dated June 24th that three days previously he had performed double castration on an old man who had been entirely dependent upon the use of the catheter for more than a year. He was able to pass urine voluntarily the same night and has had no occasion to use the catheter since.

CASE IV.—Dr. Boeckman reported the following case in the *Northwestern Lancet* of June 1, 1895: A farmer, aged 64 years, had complained of difficult urination for two years. At the time he came under observation he was obliged to pass water from every fifteen to thirty minutes. He also had a feeling of fulness in the perineum, constant desire to urinate, discomfort after the act, and dull pains in the lower part of the abdomen. His general health had begun to suffer, he had lost flesh and had a poor appetite. Palpation of the abdomen revealed an enormously distended bladder extending a couple of inches above the umbilicus. Digital examination of the prostate showed that the gland was the size and shape of half a lemon. With a hard catheter

1500 grams of residual urine were withdrawn. The urine was clear, pale, slightly acid, and did not contain albumin. The patient exhibited some degree of general arterio-sclerosis. He was castrated May 20, 1893, and returned to his home six days after the operation. At this time the residual urine was 900 grams and the prostate was beginning to shrink. The patient was examined in January of this year, at which time he looked well and thought himself as hearty in every way as he had ever been. He was obliged to rise a couple of times at night, as had been his habit since he was a child, but he was not bothered in any other way. He was free from all local or constitutional difficulties. The bladder could not be palpated through the abdominal wall; the prostate was considerably diminished in size in all directions, but yet moderately enlarged. The urethra was of normal length; the catheter passed easily. The residual urine measured 400 grams and was normal.

CASE V.—Dr. Frank W. Ross, of Elmira, N. Y., has communicated to me the details of the following case, in which he performed castration for enlargement of the prostate, early in May of this year: A man, aged 63, of good habits, had suffered from intermittent retention of urine, requiring the use of the catheter part of the time for three years previously. He had cystitis, residual urine, and a urethritis from the use of the catheter. The patient was placed in bed and the ordinary methods of treatment were adopted, but with little benefit. He was despondent and anxious to have any means employed that offered hope of relief. Double castration was performed, and five days after the operation the patient was able to pass water without the catheter, which was used, however, once a day for a week. No other treatment was employed excepting the administration of potassium citrate. The patient was in the hospital about six weeks. When admitted the prostate was 3 inches in length and hard and firm. When discharged it had decreased one-half in size. The cystitis had been relieved; there had been no retention and no residual urine. The patient was able to pass water naturally and freely and without the least trouble. He was obliged to get up but once or twice during the night, if at all. A letter received from the patient a few days before the date of Dr. Ross' letter states that he considers himself cured.

(To be concluded)

THE TREATMENT OF ENTERIC FEVER BY SYSTEMATIC COLD BATHING IN THE PENNSYLVANIA HOSPITAL, PHILADELPHIA.

Notes based upon Seventy-one Cases observed during a Service of Three Months ending November 1, 1895.

BY J. C. WILSON, M.D.,

ATTENDING PHYSICIAN TO THE HOSPITAL AND PROFESSOR OF THE PRACTICE OF MEDICINE IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

WHEN, at the beginning of my term of service, August 1, 1895, I took charge of the wards, they contained a number of convalescent cases of enteric fever, and two cases, admitted a few days previously, still in the mid-course of the attack. Of this number, these two cases only are included in the following statistics.

At the date of the preparation of this paper, November 14, 1895, there remain in the wards of those admitted during my service 17 patients fully convalescent from enteric fever—that is to say, with a normal temperature for ten days or more—and 8 still in the course of the attack. In estimating the mortality-percentages these eight cases are not considered.

Of the 71 cases, 49 were males, 22 females. The ages were: 15 years and under, 8; from 15 to 20 years, 12; from 20 to 25 years, 26; from 25 to 30 years, 16; from 30 to 35 years, 3; over 35 years, 6 —total 71. The youngest was 4 years of age; the oldest 69. The greatest number of the cases were admitted during the second week of the attack; a few during the first week, and still fewer during the third week. Of the 71 cases, all but 5 were treated by cold baths, the exceptions being cases to be referred to later, in which the diagnosis was for a time obscure.

The treatment consisted in the administration of one or two laxative doses of calomel to patients admitted prior to the tenth day; a full plunge-bath at a temperature of about 70° F. (21.1° C.) every third hour so long as the axillary temperature continued to rise to 102° F. (38.8° C.); the administration of alcohol in the form of whisky before, during, or immediately after the bath according to the requirements of individual cases. The amount of whisky varied from 4 to 8 or 10 fluidounces in the course of 24 hours. The diet consisted chiefly of milk and broths, and no solid food was given until the temperature had been practically normal for a week. In a few instances, feeble, irregular cardiac action was regarded as an indication for the administration of moderate doses of strychnin. So soon as with a fall of temperature the baths were discontinued, 15-drop doses of dilute hydrochloric acid were administered to patients with coated tongue, and in whom the hunger of convalescence was not present. To those in whom postfebrile anemia was profound the mistura ferri et ammonii acetatis was administered. The majority of the patients, however, with the exception of one or two laxative doses of calomel shortly after admission, received no medicine during the course of the attack or during convalescence.

In the 71 cases relapse occurred in 5 instances, 7 per cent.; three males, two females. Multiple relapses did not occur. Hemorrhage occurred in 5 cases, 7 per cent.; three males, two females. All of these cases recovered.

Intestinal perforation, as established by post-mortem examination, occurred in one case. In

two other cases the diagnosis of perforation was rendered probable by sudden abdominal pain, tenderness, and tympanites, followed by fatal collapse. The patients in these two instances were Russian Jews, and postmortem examination was not permitted. Taking the three cases together, perforation occurred in 4.2 per cent. The conditions in all three cases in which symptoms of perforation showed themselves were such as to preclude surgical intervention.

Left-sided croupous pneumonia with pericarditis occurred in one instance. This patient recovered.

Peripheral neuritis, affecting the lower extremities and attended for some time with distressing pain, occurred in one instance.

A complicating croupous pneumonia with parotid bubo occurred in a single case. This patient still remains in the ward, and is very ill.

A painful arthritis of the right sterno-clavicular articulation with neuritis of the brachial nerve and its branches occurred in one instance.

Furunculosis constituted a troublesome condition during convalescence in several cases. As a rule, the furuncles were distributed on the back, buttocks, arms, and the outer aspect of the thighs. They were usually small and few in number. In some cases, however, there were as many as 15 or 20 furuncles present.

Crops of pustules, circumscribed and symmetrically arranged, developed in four cases during convalescence, on the inner side of both legs just below the knee. They were very painful and tender, but speedily disappeared.

Crural phlebitis developed in two cases.

The diazo-reaction was noted in the urine of eleven cases out of fourteen examined between the tenth and the twenty-second day of the attack. In fifteen additional cases, in which the test was made later than the twenty-second day of the attack, the response did not occur.

As a rule, convalescence was uninterrupted and satisfactory. Patients were usually permitted to return to their homes about the end of the second week after complete defervescence.

The average stay in the house of 42 cases terminating in recovery was 33.5 days.

Five of the cases were of short duration, the history indicating a sickness of less than a week prior to admission, and defervescence being complete in from 5 to 7 days.

Four cases terminated fatally. Deducting the 8 cases with active fever still in the wards, the records show 63 cases with 4 deaths—a general mortality of 6.3 per cent. Of the 4 fatal cases, 2 were not bathed. Of those that recovered 3 were not bathed. Deducting the 5 cases not bathed, we find 58 cases treated by systematic cold bathing with 2 deaths—a mortality of 3.4 per cent.

These facts do not justify generalizations in regard to the results of the treatment. In the series of cases treated by systematic cold bathing at the German Hospital of Philadelphia we find a first group of 40 consecutive cases, without a death; a second of 54 cases, with 1 death; a third of 66 cases, with 7 deaths; a fourth of 66 cases, with 4 deaths; a fifth of 74 cases, with 8 deaths; and a sixth of 108 cases, with 12 deaths.

The fatal cases were as follows:

HOUSE No. 1001.—M. E., male, aged 18, Russian, a tailor, was admitted on the 21st day of August, 1895, with a history of irregular fever for five weeks; splenic enlargement; rose-spots not present on admission, but noted two days later; rash abundant and well characterized. The man had 82 baths, which were well borne, reaction being prompt. On the 22d day after admission he suddenly developed signs of perforation with great distention; effacement of liver-dulness; rapid fever-pulse; shallow respiration. He became collapsed, and died in the course of 24 hours.

HOUSE No. 1084.—J. T., male, colored, aged 20, a laborer, was admitted September 2, 1895, a walking-case, having been ill two weeks. On admission the temperature was 102° F. It subsequently ranged between 100° and 101.8° F. This patient was not bathed, nor was the diagnosis made. On the second day symptoms of peritonitis developed and death occurred on the fourth day. After death a large number of typhoid ulcers were found in the lower two feet of the ileum. About four inches above the ileocecal valve there was a small circular perforation in the floor of one of the ulcers. The vermiform appendix contained three concretions; one the size of a cherry-stone, the other two the size of grape-seeds. There was no necrosis or ulceration of the mucous membrane of the appendix.

HOUSE No. 1141.—J. B., male, a native of Russia, aged 30, a tailor, was admitted September 10, 1895, having been ill two weeks. Abdominal pain and diarrhea were prominent symptoms. The temperature-range was comparatively low, only on three occasions reaching 103°. Twelve baths were administered, each being followed by rather prolonged lowering of temperature. The reaction was not good. Signs of perforation developed on the 20th and death occurred on the following day.

HOUSE No. 1395.—A. S., female, Irish, widow, aged 69, a seamstress, was admitted October 19, 1895, having been ill 8 days. There were tenderness and pain in the right side, diarrhea, with thin, yellow stools, and great depression. There were a number of well-characterized rose-spots on the anterior surface of the thorax and abdomen. The temperature on admission was 100.4° F., rising on the following day to 101.2° F. Two days later an apoplectic seizure occurred, with coma, complete relaxation, and rapid rise of temperature to 103.8° F. Death occurred on the 23d.

In the following cases the diagnosis was for a time obscure:

HOUSE No. 1265. *Enteric fever, cerebrospinal form.*—R. C., male, aged 4, a Russian, was admitted

October 1, 1895. The patient's parents were immigrants who had been in this country but six weeks. On the voyage hither a younger sister had suffered from some fever and upon their arrival at Philadelphia had been sent to a hospital. The patient had been out of health for some time, with constipation, followed by diarrhea and headache. Four days prior to admission he complained of pain, swelling and tenderness of the belly. On admission there was slight, painful rigidity of the muscles of the back of the neck. There was some spasmodic contraction of the muscles of the arms and hands. Except slight dilatation, there were no pupillary symptoms, no strabismus, no trismus; there was no disease of the ears.

A few hours after admission there was a sudden drop in the patient's temperature from 102° to 95° F. It, however, rapidly rose again. The patient was fretful; he lay on his side, with the limbs flexed. There were manifest evidences of pain upon being disturbed. Ankle-clonus was elicited and the knee-jerks were increased. There was slight albuminuria with hyaline and granular casts. There were one or two herpetic vesicles upon the lips and a few pustules in the occipital region and on the trunk. The tongue was moist, thickly coated with a white, pasty fur; it was red at the tip and edges.

On the third day after admission a crop of typical rose-spots appeared upon the abdomen and chest. The spleen was now made out to be markedly enlarged. About this time there was a rapid amelioration of the nervous symptoms; the reflex phenomena subsided; there was less pain on movement and the case presented the symptoms of a typical enteric fever of moderate severity in childhood. Treatment was by systematic cold baths. Convalescence was retarded by furunculosis.

HOUSE No. 839. *Enteric fever, pulmonary form.*—A. M., female, aged 22, unmarried, a domestic, was admitted August 1, 1895. The patient stated that she was perfectly well until about a week before admission, when an infant in the family in which she was employed died in her lap after a short sickness. She was much shocked, became very weak, and stated that she had been out of her head. The temperature was normal on admission. The woman was very weak and apathetic, with complete loss of appetite; the tongue was coated; the bowels constipated. There was cough, with disseminated small mucous râles on both sides. Two days later the morning temperature rose to 102.3° F.; the evening temperature was 104° F. The tongue was coated and tremulous; the abdomen slightly tympanitic; splenic dulness was somewhat enlarged. Signs of bronchopneumonia developed, being much more marked upon the right than upon the left side. The condition remained much the same, with marked hebetude, irregular fever, and marked physical signs of pulmonary disturbance until the 19th, when intestinal hemorrhage took place. Prior to this, one or two suspicious spots had been noted upon the abdomen. This patient was bathed and made a tedious but satisfactory recovery.

HOUSE No. 855. *Enteric fever, pulmonary form.*—W. T. B., male, aged 33, unmarried, a laborer, was admitted August 2, 1895, having been sent to the hospital by a competent physician as a case of acute diffuse tuberculosis. His illness had developed gradually during the preceding fortnight, with loss of appetite, prostration, severe headache, abdominal cramps, and tenderness. Had had no diarrhea or bleeding at the nose. There had been cough, blood-stained expectoration, rapid loss of flesh, and painful stiffness of the back. Upon admission the temperature was 100° F., the pulse 88, the respiration 28. The face was flushed, the pupils not dilated, the tongue tremulous and coated, the area of splenic dulness not increased. There was abdominal tenderness with pain, but no tympanites. There was marked percussion-dulness over the lower lobe on the right side posteriorly, feeble bronchovesicular respiration, and, upon deep inspiration, a few fine crepitant râles. This patient was very sick for a long time with cough, rusty sputum, marked fever, the temperature running at times as high as 104° F.; there were severe pleural pains on the right side, delirium, and vomiting. Two weeks after admission, for the first time, the area of splenic dulness was found to be increased. A little later the belly became tympanitic, and on the 19th day after admission for the first time the appearance of rose-spots was noted. From this time on the case ran the course of a severe enteric fever with very irregular temperature, the temperature first touching normal August 25th, 23 days after admission, but again rising, and defervescence not being completed until September 3d. This patient was not bathed.

HOUSE No. 1359. *Enteric fever, irregular form, with chills at onset.*—N. S., female, aged 21, unmarried, a dressmaker, was admitted October 14, 1895, on the seventh day of the sickness, which began with headache, pain in the back, and fever. The patient had had previous good health. On the first and second days chills occurred, followed by sweating. The patient took quinin freely prior to admission. The temperature on admission was 103.5° F. the urine normal; examination of the blood revealed no plasmodia. The tongue was dry and red at the edges; there was a good deal of tenderness in the right iliac fossa, with moderate splenic enlargement, and slight tympanites. The bowels were at first constipated; later, there was moderate diarrhea with yellowish stools. There was no eruption.

The attack came on at the close of menstruation, and the pain and tenderness in the lower part of the abdomen on the right side above Poupart's ligament suggested a local inflammatory process, implicating either the right uterine adnexa or the appendix. The patient was not bathed. The pain and tenderness gradually subsided, and the subsequent temperature-range justified the diagnosis of enteric fever.

HOUSE No. 1168.—An obscure case with very irregular temperature, was not systematically bathed, and was removed by his friends against advice. It was subsequently learned that he developed a well-characterized enteric fever.

I desire to express my thanks to Dr. F. A. Packard, who had the kindness to take charge of the service during my temporary absence; to Drs.

Roberts, Nicholson, and Ward Brinton, House-physicians, without whose enthusiastic co-operation the notes could not have been made; and finally to Dr. Starbuck, House-physician, who studied the diazo-reaction.

SEVENTEEN CASES OF CHRONIC (RELAPSING) APPENDICITIS, TREATED BY OPERATION.

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(Concluded from page 566.)

LASTLY, a few words about the operation. I make a clean cut straight down on the most prominent part of the swelling, if there is any, or over the supposed site of the appendix, if there is no swelling. I begin near the anterior superior spinous process, and cut inward and slightly downward toward the inner border of the rectus. In fact, the incision is almost transverse. The more nearly transverse it can be made, the better the union afterward, and the less the danger of subsequent hernia. I am afraid of the plan of separating the fibers of the different planes of muscles with retractors and two assistants. The muscles must be injured, repair of bruised parts will be slower, hernia more common, and drainage, if needed, less perfect. The incision is not more than 2 in. long in the skin, and shorter as the cavity is reached. The peritoneum is opened most cautiously, as a piece of omentum, or, more important, a portion of the gut, may be adherent, and in the line of incision. After the belly is opened, Trendelenburg's position is of great assistance. If the appendix is difficult to find, I look for the anterior bundle of longitudinal muscular fibers of the colon, follow this as a guide, and it will usually lead one to the little organ. When found and separated, if attached, a circular cut through the peritoneal coat is made, and the serous membrane stripped down for half-an-inch; a fine silk ligature is tied around the muscular and mucous coats of the little process, and the appendix cut off. The ends of the ligature are cut short. The detached serous membrane is now brought back and stitched or tied over the end of the stump.

Any portion of the omentum that has been adherent and in contact with the appendix is ligated and cut off; no matter how large a portion it is, if it is injured or suspected of being infected, it is removed.

The most difficult part of the operation is to deal with the adhesions. It is very important, if it is possible to do so, that all adhesions should be undone. If they are left untouched, the patient may get well of the operation, but remain an invalid for the rest of his life, liable at any moment to intestinal occlusion, and subject always to tenderness over the abdomen, and to constant gastrointestinal uneasiness.

Iodoform is freely dusted over any injured places in the peritoneum, drainage of gauze introduced if deemed necessary, and the wound closed with a continued fine silk suture for the peritoneum, and silkworm-gut sutures for the muscles, fascia, and skin.

CASE I.—Mrs. W. H. B., 30, a patient of Dr. A. G. Taylor, of Chula Depot, Va., was admitted October 11, 1893. She has had repeated attacks of appendicitis; the duration of one attack was 2 weeks. The appendix was found very much enlarged and firmly adherent to the cecum; it lay fastened across the organ like a strap. The adhesions were old and well organized, and their separation was difficult and had to be made with the point of the knife. The appendix was found to be 5½ in. long, and as large as my thumb. After the appendix was separated from the cecum, the raw surfaces were rubbed over with Monsel's solution of ferrous sulphate, and the cavity of the abdomen closed. Recovery was uninterrupted.

CASE II.—Mrs. L. B., 42, a patient of Dr. Stuart McGuire, of Richmond, Va., was admitted November 24, 1893. She has had 5 attacks of appendicitis; the last attack was violent, confining her to bed for 3 weeks. The appendix was firmly adherent to the right ovary, which was enlarged and inflamed. Both appendix and ovary were removed, followed by an uninterrupted recovery. In this case the appendix was elongated, its cecal end partially occluded, its free end dilated and distended with gas, and the mucous coat thickened and diseased.

CASE III.—Miss L. B., 16, a patient of Dr. J. H. Young, of Burkeville, Va., was admitted November 3, 1893, with a history of one severe and several slight attacks of appendicitis, the last attack being very severe. The appendix was found in its normal position, slightly congested and free from adhesions. It was 6 in. long and ½ in. in diameter. The free extremity was enlarged, the base contracted; it was dense and firm, almost cartilaginous in consistency. The lumen next to the cecum was completely occluded by inflammatory deposit for the distance of an inch, and the mucous membrane which lined the patent portion of the tube was filled with a seromucous fluid. Recovery was uneventful.

CASE IV.—Miss A. J., 30, a patient of Dr. H. G. Melvin, of Houston, Va., was admitted December 4, 1893, with a history of several severe attacks of appendicular colic during the past year. The pain was violent, necessitating the use of morphin, lasting sometimes for hours, and on one or two occasions for days. The abdomen was opened and the appendix found at once; it stood up as if made of erectile tissue, and if pressed down would at once fly up in the erect position; its free end was dilated and filled with gas. For an inch from the cecum the little tube was apparently solid. The peritoneal covering was congested. There were no adhesions. The appendix was removed and recovery

was uninterrupted. The operation was simple and quickly performed. The patient remains well.

CASE V.—Mrs. C. R. H., 45, a patient of Dr. C. V. Carrington, of Richmond, Va., was admitted December 27, 1894. An operation was performed on this lady for the removal of both ovaries and tubes 2½ years ago. Six months ago she had her first attack of appendicitis, and every 2 or 3 weeks since that time an attack occurred, each time after a shorter interval, and each time with more intense symptoms. I opened the abdomen and found the appendix swollen and congested and firmly adherent to the stump of the right ovary; it was peeled loose with some difficulty and removed. The appendix was greatly elongated and sharply bent at its cecal attachment. The lining membrane of the appendix showed ulcerative changes, and there was a large amount of mucopurulent secretion in it. She recovered without bad symptoms.

CASE VI.—Mrs. M. B. G., 34, a patient of Dr. James B. McCaw, of Richmond, Va., was admitted December 29, 1894, with a history of griping pains in her right side, the pain continuous, and subject to occasional severe exacerbations, which kept her in bed for days. An examination showed considerable enlargement of the right side; vaginal and rectal examination showed a large lump in the right iliac region. The right ovary was found to contain a dermoid cyst as large as an orange, to which the appendix had grown. The dermoid cyst was removed at the same time, and the woman made an uneventful recovery.

CASE VII.—Mrs. F. B. C., 24, a patient of Dr. Henckel, of Staunton, Va., was admitted December 30, 1894. Two years ago I removed her tubes and ovaries, which were extensively diseased. Six months ago she had her first attack of appendicitis. She has had in all about 5 severe attacks, each time confining her to bed, and requiring the use of morphin. The last attack was attended with great pain, swelling, and fever. The appendix was found attached to the stump of the right ovary; it was sharply bent upon itself and stretched. It was easily separated from its attachments, however, and brought out for inspection. It was found congested, red, and swollen, and after its removal was seen to contain several hard fecal masses. Recovery was uninterrupted.

CASE VIII.—Mrs. F. J. T., 48, a patient of Dr. Harrison, of Richmond, Va., was admitted January 9, 1895, with an ovarian tumor of several years' standing, but, as for a long time it gave her no trouble, she declined operative interference. Suddenly, however, and without any explanation, she began to suffer great pain in the right groin; the pain was continuous. Occasionally, however, she would have a sharp attack, which confined her to bed. On opening the abdomen, the first thing I saw was the appendix running across the face of the tumor like a little snake. It was firmly adherent and almost impossible of detachment without bursting it or the tumor. I removed it, however, and at the same time the ovarian tumor was taken away. Her recovery was complete.

CASE IX.—Miss N. T. S., 16, a patient of Dr. Stuart McGuire, of Richmond, Va., was admitted March 20, 1895, having had several attacks of acute appendicitis during the past year, but as 3 or 4 months had passed and no return of the trouble appeared, her parents sent her to Washington City to school. While there she had a pretty severe attack. Her parents brought her back after the attack subsided, and I deemed it best, after examination, to remove the appendix. The abdomen was opened, the appendix found closely adherent to the cecum, going transversely across the organ, and somewhat constricting the lumen of the bowel. It was peeled loose after a great deal of trouble and removed. A small opening was made in the cecum in detaching this appendix, which was closed with fine silk sutures. Recovery was uninterrupted.

CASE X.—Mrs. E. B. B., 35, a patient of Dr. R. E. Franklin, of Richmond, Va., was admitted March 29, 1895, having suffered for the last 6 months. The pain was usually confined to the right iliac region, but occasionally extended all over the abdomen. Her last attack kept her in bed for weeks, during which time she had fever, great pain, loss of appetite, and constipation difficult to overcome, and her life was thought to be in great danger by her attending physician and by myself, who saw her in consultation. The abdomen was opened and the appendix was found doubled on itself and fastened to the cecum; it was dense and firm in consistency and of unusual length. The omentum was closely adherent to the cecum and appendix; after separating the omental adhesions a large slice of the omentum was ligated and removed. An adherent coil of the intestine was also released. The appendix was removed and found full of fecal matter. The patient recovered without a bad symptom.

CASE XI.—Mr. G. H. G., 17, a patient of Dr. W. L. Drewry, of Wakefield, Va., was entered in December, 1893, with a history of several attacks of chronic relapsing appendicitis, the last one only a short time ago. This was very severe, and he was obliged to take a good deal of opium. I operated on him and came down, after the abdomen was opened, upon the omentum, slightly adherent to the parietal peritoneum. By palpation I could feel through the thin piece of omentum an abscess-cavity. Before opening this I stitched the surface of the omentum to the parietal peritoneum, so as to keep the cavity from the contents of the abscess. After carefully packing gauze around the edges of the opening I carried the knife through the omentum into the abscess-cavity; following it with my finger, I found the detached appendix, which was easily removed, along with one or two hard small fecal lumps. The cavity was then washed out carefully, a drainage-tube of rubber introduced, and the wound closed. Recovery was uneventful.

CASE XII.—Mr. W. C. B., 27, a patient of Dr. Keister, of South Boston, Va., was admitted April 6, 1895, having had 14 attacks of appendicitis, each more and more severe than the preceding one. I examined him some months ago and advised an operation, but he declined. Three weeks ago he had a very severe attack, attended with the usual

symptoms. I opened the abdomen and found the omentum covering the cecum adherent to that organ, and difficult to detach. After separation a portion of the omentum was ligated and cut away. Several points of adherent bowel were separated. The appendix was fastened to the cecum for the greater portion of its length and was detached with difficulty. It was found after removal to be filled with foul-smelling pus. The parts about the cecum looked dirty, brown, and friable. Gauze-drainage was used and the cavity closed. The drainage was permitted to stay for 3 days and then removed. Recovery followed without any bad symptoms. The operation in this case lasted 75 minutes.

CASE XIII.—Mr. C. R., 30, a patient of Dr. Lewis Wheat, of Richmond, Va., was entered April 25, 1895. He had had three attacks of appendicitis, the last one very severe, keeping him in bed for 3 weeks. I saw him at this time in consultation with Dr. Wheat, and advised him not to have the operation done until the fever and acute symptoms had disappeared. I operated April 25th, 6 weeks after the subsidence of the last acute attack, and found very extensive adhesions, the omentum being fastened to the cecum. The adhesions were hard to break up. I found three points of adherent coils of intestine, which were separated with great care, and took a good deal of time. The appendix was fastened tightly to the cecum, and in detaching it I made a hole in the bowel about ½ in. long and ¼ in. wide. This was immediately sewed up with fine silk, and the appendix removed. It was found after removal to be closed at its cecal end; it contained a large quantity of bodies like boiled rice, but no pus. Gauze-drainage was inserted. The next morning the man was doing so well that the House-surgeon removed the gauze-drainage, although the discharge had been very free. As soon as the gauze was removed he began to get worse, and his temperature went up to 101°. That night, fortunately, I was able to replace the gauze and re-establish the drainage. The improvement was immediate, and his recovery after that was uneventful.

CASE XIV.—Mr. H. B. L., 21, a patient of Dr. David Lucas, of Quinton, Va., was entered March 22, 1895, having had 10 attacks of appendicitis, each successive one becoming more and more violent. I opened the abdomen March 24th, found the appendix with great difficulty, underneath the cecum, which organ was adherent to the iliac fossa, and had to be detached. The appendix, when found, was adherent for ¾ in. of its free end to the peritoneum covering the iliac vessels; it was closed for about 1 in. of its cecal portion; the free end of it was bulbous, swollen, dilated, and filled with dirty, foul-smelling pus. Around the appendix in the iliac fossa was deposited quite a quantity of stuff, which looked like boiled custard, probably about an ounce of it in all in that region. This was scraped out, curetted, and the cavity dusted thickly with iodoform. Gauze-drainage was freely used in this case, being allowed to remain for 3½ days. Recovery was uneventful.

CASE XV.—Mr. A. A. M., 28, a telegraph-operator, a patient of Dr. C. V. Robinson, of Petersburg, Va., was entered February 4, 1895. He had had repeated attacks of appendicitis in the last two years, the last ones being very severe, attended by vomiting, pain, fever, etc. The operation was performed February 5th. The omentum was fastened to the cecum and to the anterior abdominal wall; it was detached without great difficulty, however, and the detached portion ligated and removed. The appendix was found upon the inner side of the cecum, imbedded in a mass of inflammatory deposit. The adhesions were difficult to break, and at one time I was almost on the point of abandoning the attempt to find the appendix. When, however, the adhesions were completely removed, the appendix was found enlarged, swollen, perforated at its extremity, and so rotten that it was with great difficulty it could be handled and tied off. On the inner side of the cecum, at the site occupied by the appendix, was a cavity filled with some boiled-custard-like material. This was scooped out, the cavity-wall curetted and covered with iodoform. Gauze-drainage was used very freely, and the wound closed. It was impossible, in this case, to cover over the stump of the appendix with peritoneum as I usually do. The gauze-drainage was permitted to remain for 3 days, when it was removed, and the man recovered without any untoward symptoms. On June 5th, 4 months after the operation, an abscess formed in the abdominal wall; not in the cavity of the belly. This abscess was opened and drained by Drs. Budd and Robinson. The man came to see me August 1st quite well again.

CASE XVI.—Mr. G. M., 29, a bookkeeper, a patient of Dr. Lewis Harvie, of Danville, Va., was entered June 15, 1895, having had repeated attacks of appendicitis, which began about 18 months ago, and recurred every 2 or 3 months. One attack kept him in bed for 6 weeks. I operated June 18th, making the incision in the usual way, and found that the swelling was due to distention of a portion of the cecum. The appendix was small, fastened like a strap to the cecum, and intimately blended with the bowel. I removed it in the usual way, stripping it loose from the cecum, although it was difficult to do, and I was compelled sometimes to use the point of the knife. Gauze-drainage was used. The man recovered without a bad symptom.

CASE XVII.—Mr. J. H., 28, a patient of Drs. Austin and McChestney, of Lewisburg, W. Va., had had repeated attacks of appendicitis, requiring the free use of morphin to stop the pain. His general health had been impaired by the attacks. The most severe one was in the spring of last year, which confined him to bed for some time. He was never free from pain, and there was tenderness on pressure over the region of the appendix. I operated June 25, 1895, finding the adhesions very extensive, and the omentum fastened to the bowel at many places. The appendix was distended and enlarged, filled with mucopus, and its walls studded with numerous small, dark points. The operation was an exceedingly difficult one; the appendix was hidden under a mass of adhesions, which were old and well organized, and it was not until I had separated a great many of the adhesions that I was able to find the

appendix at all. Gauze-drainage was used, and the patient did well for 24 hours. His temperature the morning after the operation was 99°. About 2 o'clock on the second day his temperature rose to 101°, at 4, 102°, at 5, 103°. Dr. Stuart McGuire had given him 5 gr. of calomel that morning, and afterward magnesium sulphate, both of which, however, were rejected. Enemata were used, the long rectal tube was employed, but all failed to move his bowels. The next day Dr. Stuart McGuire cut the stitches and opened the wound, found a pint or more of bloody serum in the cavity, the small intestine distended with gas, and a small piece of the omentum which I had detached was fastened to the bowel in the neighborhood. These were all broken loose, the abdomen flushed out, and a great many drains of sterilized gauze were inserted. The patient rallied well, and an hour later was apparently better than before this secondary operation; about dark, however, he began to fail, and died at 10.20 that night from septic peritonitis.

HEMIFACIAL ATROPHY.

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A RARE disease is, or should be, something more than a mere pathologic curiosity. Such a disease always has its practical relationships. It is not reserved for the specialist alone, who knows how to diagnosticate it and may, or may not, know how to treat it. It is only too likely to fall to the lot of other practitioners, and it then imposes obligations and responsibilities upon them which a fair general acquaintance with it would do much to lighten. One of the evils of the increasing tendency to specialism is that it directs the attention of the general physician away from anything that looks a little strange and unduly interesting.

Another tendency at present is to regard only those diseases as *practical* that admit of ready and successful treatment. Those who take this view seem to forget that the science of diagnosis underlies the whole practice of medicine, and that the province of the physician is more frequently to know than to do.

Some such considerations as the foregoing must serve as an apology for presenting a brief statement of a rare, incurable disease, with a photograph of a patient afflicted with it, in a medical journal which aims especially to minister to the practical needs of the profession.

Hemifacial atrophy was apparently first described by Parry in 1835. The latest writer on the subject, Collins,[1] says that it is still a rare disease and that in an extended search of the literature he had been able to find only a few more than one hundred cases reported. The number of patients photographed is doubtless much smaller; and as the disease lends itself particularly well to photography, cases so presented are much increased in value.

The practical relationships of this disease are in no way better shown than by its etiology. Collins, from a study of reported cases, gives as real or apparent causes the following: local injury, such as pressure or blows on the head or face; local lesions, such as abscess behind the ear, inflammation of the lachrymal sac, and inflammation of a submaxillary gland resulting from a sore-throat; the infectious diseases, such as influenza, erysipelas, scarlatina, and typhoid fever. Hemifacial atrophy has been found associated also with such diseases as hysteria, epilepsy, locomotor ataxia, insanity, multiple sclerosis, and syringomyelia. It has occurred also in association with somewhat similar trophic lesions in other parts of the body, as scleroderma; and with some skin-diseases, as pityriasis rubra. Some of these alleged causes are perhaps open to doubt; but it seems probable that local traumata and other local lesions may be in some cases the starting-points of the affection. Lewin found a traumatic history in 14 out of 68 cases, and Mendel a peripheral origin in 19 out of 86 cases (quoted by Sachs).[1]

Hemifacial atrophy occurs more frequently in females than in males. It is most common in early adult life, although cases occur in childhood and in old age.

This disease, as its name indicates, is characterized by an atrophy of one side of the face. The exact location and extent of this wasting, as well as the accompanying symptoms, differ widely. Without exception, however, so far as I know, the disease does not extend across the median line. It usually begins as a circumscribed spot or patch, from which the pigment either disappears or in which it is altered, and in which the skin becomes notably thinned. From this, as from a center, the disease spreads. Not only the skin, but also the subcutaneous tissues and even the bones are soon involved. The muscular tissue is not, as a rule, so completely involved; but this rule varies. In some cases the muscles are wasted, in others they are the seats of tonic and clonic contractions. As the disease advances, great deformity results. The bones of the forehead and face may become extensively wasted, and this wasting may be so sharply demarcated at the median line that the patient presents almost the appearance of having received a saber-cut. The atrophy causes a scar-like tissue, which in some cases is bound to the bone beneath.

Tactile sensation is usually not involved; neither is the thermal or the pain-sense. In some cases neu-

[1] A Text-book of Nervous Diseases by American Authors, edited by F. X. Dercum, 1895.

[1] The Medical Record, March 15, 1890.

ralgic pains have occurred. Thus Courtet[1] observed severe pain both before the onset of the disease and after its establishment. It was not unlike toothache, and was apparently caused by carious teeth.

The special senses, as a rule, are not affected. Exceptions are reported by Bannister (quoted by Mills),[2] who observed loss of taste, with atrophy of one side of the tongue. The ear-drum has been noted to be diseased in one case.

The muscles of mastication have been observed to be affected with both clonic and tonic spasms (Courtet, Sachs, and others). A veritable trismus, holding the jaw firmly, has occurred temporarily in some cases. Fibrillary contractions are occasionally seen.

In some cases the eye seems to be withdrawn into the socket (enophthalmia).

Other parts may be affected, as one nerve of the arm. This observation is a very rare one. The hard and soft palate, the uvula, and the gums of the affected side may be involved.

The hair of the affected region usually falls out. It may, in some instances, change color. The contrast in the growth of the beard on the two sides is sometimes very great. When the atrophy affects the scalp an area of alopecia is the result. This area is usually sharply demarcated.

Thesebaceous glands are atrophied with the skin. Sweating, as a rule, is not affected. Contraction of the pupil, variations in the normal surface-temperature, and even hyperidrosis are indications of involvement of the sympathetic nerve.

The disease is sometimes very slow in its course. It may be confined for years to one comparatively limited region, and does not by any means always involve the whole of one side of the face, or, at least, does not do this until very late in its course.

In the case which I report the disease is still in a comparatively early stage. As shown in the photograph, the lesion is limited to the forehead and upper and lateral parts of the nose.

A. S., a young Swedish woman, aged about 25, first noticed a white patch near the bridge of the nose several years before her case was brought to my notice. This patch gradually spread upward until it reached and finally invaded the hairy scalp.

The skin of this area was atrophied, the true skin almost destroyed, and the epidermis left as a dead-white, lifeless-looking, and shrivelled integument. The fat and connective tissue were also gone, and the bone was deeply atrophied—one might almost say eroded. The resulting lesion, confined strictly to one side, but extending quite up to the median line, had the appearance of a cleft, or, as it has been called, a saber-stroke. Where it involved the hairy scalp the hair had fallen out, leaving the unsightly lesion still more conspicuous (see figure). The disease had extended downward to one side of the nose, where it was as yet quite superficial, not involving the bone, and hence not appearing plainly in the photograph. It tended to spread also laterally on the forehead. There was no pain, itching, or subjective sense of any kind in the affected area. Neither was there anesthesia or analgesia. Sweating was apparently not increased.

All the other symptoms detailed earlier in this paper were absent—the disease being still of comparatively recent origin, and hence confined to a comparatively limited area, it is, perhaps, better depicted in the photograph than it can be by word.

In this case there was no known cause. The patient had received no local injury, nor had she had any local inflammation or lesion of any kind to which the disease could be ascribed. The affection was very slowly progressive, and during the six months that it was under my observation it yielded in no way to treatment. This treatment in fact was only empiric, for I know of nothing that has any power over the disease.

The diagnosis of hemifacial atrophy is usually not difficult. The disease is to be distinguished especially from the morphea of the dermatologists. This latter is apparently also a trophoneurosis, but it does not involve the bone. It is probably closely related to hemifacial atrophy, and some reported cases of it are apparently identical with the disease described here.

The prognosis of hemifacial atrophy is entirely unfavorable. Many writers, apparently following older examples, speak of the disease as not endangering life, and seem to wish to derive from this fact some element of comfort for their patients. This is cold comfort, however, as the patients naturally are much dismayed at the inveterate and disfiguring disease which marks them so terribly for life.

It is of some practical importance, perhaps, con-

[1] Gaz. Heb. de Méd., 1876, p. 195.
[2] Pepper's Syst. of Med., vol. v.

sidering that hemifacial atrophy may follow surgical lesions, to emphasize the fact that in any unfortunate case in which it thus happens no responsibility can attach to the practitioner who has treated the primary lesion.

This disease is probably a true trophoneurosis. In the few autopsies that have been made (that especially of Mendel) the trigeminal nerve has been found involved in an inflammatory or degenerative process. The pathology has given rise to much speculation, which this is hardly the place to recapitulate at length.

In conclusion, I may say that I have used the term *hemifacial* atrophy as rather more accurate than *hemiatrophy* of the face, a term which is used by many writers.

CLINICAL LECTURE.

SOME PHASES OF SYPHILIS OF THE BRAIN.

A Clinical Lecture delivered at the Philadelphia Hospital.

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GENTLEMEN: Many diseases that are usually considered under other special heads are really syphilitic in origin. Encephalic and spinal tumors, arteritis and thrombosis of both cerebral and spinal arteries, hemorrhages, which are frequently the result of rupture of vessels weakened by syphilitic disease; and finally meningitis, encephalitis, and myelitis, and both meningoencephalitis and meningomyelitis, may all be syphilitic affections. Syphilis needs to be considered separately for certain practical reasons, one of the most important of which is that the lesions of syphilis are frequently not only multiple, but are of different pathologic types in the same case, and hence give a symptom-picture that has a stamp of its own. It is possible that a single gumma may be the only intracranial lesion, but this is a rare occurrence. Not only do we have in nervous syphilis lesions diverse in their pathologic characteristics, but frequently the disease shows a tendency to arrange itself under certain peculiar clinical types. The best method of considering syphilis of the nervous system is probably one that presents a series of such clinical types that occur with considerable frequency, and which can be related with comparative accuracy to lesions of a definite character. Most of the attempts to classify syphilitic diseases of the nervous system have been confusing and lacking in some essential features. Mickle, for instance, gives: (1) cerebrospinal; (2) hereditary; (3) spinal; (4) tabetic; (5) convulsive; (6) neuralgic. Here is a strange admixture of anatomic, etiologic, pathologic, and semeiologic factors as the bases of a single classification. Others, like H. C. Wood, after discussion of several clinical types—epilepsy, paralyses, cerebral and cranial, apoplectic and comatose attacks, and episodes of somnolence—abandon classes entirely for the study of special symptoms.

In approaching the subject of nervous syphilis, the first great general subdivision which should be made of cases as they present themselves in ordinary practice is into the affections directly due to the continuing action of the specific virus, and those which are the more or less remote consequence of this virus. These two classes constitute Fournier's *specific* or *syphilitic* and *parasyphilitic* diseases. The parasyphilitic diseases are affections that are the issue of syphilis, but are not its first and most direct results.

Fournier's distinction is one to be especially borne in mind in connection with the degenerative diseases or affections showing arrest of development, and in which a history of acquired or inherited syphilis is present. "The *specific* group arise from the specific action, processes, and lesions of syphilis. The *parasyphilitic* have origin in syphilis, are products of its action, under its influence, and without it in all probability would not be present; but although thus proceeding originally from syphilis are not of a syphilitic (specific) nature. As parasyphilitic, Fournier classes, for acquired syphilis: pigmentary syphilid; acute hysteroneurasthenia of the secondary stage and later neurasthenic symptoms; tabes; general paralysis; a special form of epilepsy; and of muscular atrophy. For hereditary syphilis: many general or partial dystrophies and organic malformations (*e. g.*, dental); physical or mental developmental defects, infantile types; cachexia; rickets; hydrocephalus; some cases of true epilepsy; certainly juvenile tabes and general paralysis." (Mickle.) To most of the diseases of the parasyphilitic class no allusion will be made in this lecture, although the wards of this hospital abound in illustrations. Their relation to syphilis needs separate and special consideration.

Let me at the outset, however, say a few words about syphilitic neurasthenia and syphilitic hysteria, typical cases of which have been described by Fournier, Kowalewsky, and Dercum. Typical cases of this category do not present marked ophthalmoscopic changes, nor any evidence of focal nervous disease, although aphasias and palsies are sometimes present. A syphilitic neurasthenic or hysteric is a patient who, with a clear history of syphilis, presents all the characteristics or some of the characteristics of a case of grave hysteria or neurasthenia. The affection may be primarily due to the effect of the syphilitic virus upon the blood; but sometimes it is the result of prolonged antisyphilitic treatment, or it may be dependent upon the psychic shock and depression largely caused by the knowledge of infection; or the changes that have taken place in the vessel-walls and in the nerve-tissues through the action of the poison—although these two last classes might as well be placed under some other head.

The cases now to be shown will be presented in the briefest possible manner in pursuance of my intention to give simply a bird's-eye view of some phases of syphilis of the brain illustrated by clinical cases. It will be understood that in these cases careful studies with detailed records have been made, but that time will permit me to present little more than the baldest outlines. The case with which I shall begin the series that will be used to illustrate these lectures was first supposed to be a case of hysteria in the male. The patient was sent to the ophthalmologic department of the hospital to have his fields of vision tested for the reversions and contractions so often present in grave hysteria.

CASE I. *Case supposed to be one of hysteria or neurasthenia; ophthalmoscopic examination shows neuritis and perivasculitis; other evidences of cranial-nerve disease and cerebral involvement.*—The patient, P. L., has a clear history of syphilis. He had fallen into a peculiar mental state and presented evidences of general nervous and muscular weakness. On ophthalmoscopic examination, Dr. C. A. Oliver found a most interesting condition of neuritis with perivasculitis. His report is as follows: Marks of old plastic iritis are present, and most pronounced in the left eye. The ophthalmoscope shows a low grade of neuroretinitis, with perivasculitis on both sides and a broad hemorrhage in the right retina. Vision is normal, and the fields of vision are also normal. There is no motor disturbance. On the blackboard is a picture in colors, drawn by Miss M. Washington, the artist, from actual observation of this patient's eyes with the ophthalmoscope. This case is a striking illustration of the possibility of obtaining, by an examination of the eyes, an idea of the pathologic processes probably going on in and around the vessels of the brain. Similar conditions to those visible in the vessels, vessel-walls, and perivascular spaces of the fundus are probably present in the brain. The revelations of the ophthalmoscope led to a closer examination for other symptoms. The patient has a scarcely-perceptible awkwardness of articulation, the right side of his face droops slightly, but his tongue deviates very decidedly to the right. Mentally his condition is one of slight apathy with timidity and apprehension, with also a lack in his powers of attention. At times he is decidedly emotional.

The case is certainly not one of neurasthenia or hysteria pure and simple, although the functional weaknesses and disturbances may be due in part, at least, to the effects of the specific virus. Here are the clearest evidences of cranial-nerve disease and of some cerebral involvement, probably chiefly cortical and prefrontal. My main purpose in presenting this patient is to call attention to the fact that in some cases supposed to be instances of syphilitic neurasthenia and hysteria, signs of organic disease can, on close scrutiny, be found.

The best general classification of syphilitic (true specific) diseases of the nervous system is into *encephalic* or *intracranial*, *encephalospinal*, and *peripheral-spinal* (lesions of spinal nerves). Any one of the subdivisions of the nervous system may be separately affected; any two or more parts may be attacked at the same time, or all may simultaneously be the seat of active specific disease. The difficulties of subclassification are great. In the present lecture only encephalic syphilis will be considered, and chiefly those forms of it in which cranial-nerve disease is present, either alone or associated with disease of other parts of the brain.

Considering the subject from the pathologic side, perhaps no better practical classification has been made than that of Bramwell, who divides encephalic syphilitic lesions into (1) intracranial nodes with or without meningitis; (2) gummata; (3) lesions of the large or medium-sized bloodvessels, chiefly obliterative endarteritis; (4) diseases of the minute vessels, in many instances periarteritis rather than endarteritis; (5) localized encephalitis in the neighborhood of gummata and meningeal lesions; (6) inflammation of the intracranial portions of the peripheral nerves; and (7) meningeal inflammations without gummatous deposits(?). Almost every one of these classes of lesions will be illustrated by our cases.

Swellings or nodes due to syphilitic disease of the periosteum, or both the periosteum and the bone, may give rise to symptoms that simulate closely those of meningitis or tumor, and indeed meningitis, tumor, or softening due to vessel-disease may be associated with such nodes. These are often extracranial, and it is by no means uncommon to find intracranial nodes present in the same case with the extracranial swellings. The prominent symptom will usually be headache with evidences of pressure and irritation according to the site of the lesion. When such nodes are prefrontal and large, somnolence and mental hebetude may be marked. Paresis or affections of the special senses may be present. Occasionally these periosteal swellings are situated along the course of the cranial nerves or around their foramens of exit, and thus may give rise to cranial-nerve palsies, anesthesias, and neuralgias. As syphilitic nodes, either intracranial or extracranial, when efficiently treated, have a more favorable prognosis than some of the varieties of encephalic syphilis, it is important to bear in mind the probability of their existence. They sometimes melt away under active treatment with mercury and the iodids.

In the present lecture I have not the opportunity of showing any cases which I believe to be illustrations of syphilitic osseous or periosteal disease, although such cases are often found in the nervous wards of the hospital. I exhibit, however, two specimens (Fig. 1) from

FIG. 1.

Two specimens of syphilitic bone-disease: A, ossifying periostitis; B, greatly thickened and necrosed calvarium.

the Pathologic Museum. One of these is from a patient who was for many months under my care. Syphilitic periostitis, ostitis, and necrosis finally caused the large irregular opening seen in this calvarium. The nervous system of this patient was also attacked in various other ways by the specific virus. The other is a specimen of syphilitic ossifying periostitis. While some cases of periosteal and osseous syphilis are amenable to early and active treatment, this specimen shows the permanent ravages that may be produced by such diseases.

The next cases, some of which I will present in groups, illustrate some of the most frequent clinical types seen in this hospital.

In the first place, encephalic cases are seen in which for a long time, or perhaps even until a fatal issue results, *only one or two dominating symptoms*, such as *headache*, *somnolence*, etc., are present.

CASE II. *Headache, vomiting, and emaciation; double optic neuritis, but no motor or sensory symptoms.*—This patient is a German, 30 years old, with an uncertain past history. His present illness dates back three months. He began to suffer with great pain in the head, had no appetite, and after a few days was attacked with nausea and vomiting, which continued for one or two weeks. He had no paralytic or sensory symptoms. The only symptoms to which attention was attracted until the ophthalmoscope was used were headache, nausea, and vomiting, except that the man was neurasthenic and had lost flesh. I show you upon the blackboard another beautiful illustration in colors, drawn by Miss Washington, of the optic neuritis present in this case, and I append the notes of Dr. Oliver's examination. Neuroretinitis is present on both sides, older on the left, atrophic changes appearing in many places. This disc is swollen so as to project far into the vitreous, —5 D., as measured by the ophthalmoscope and by actual measurement 1.33 mm. Numerous hemorrhages are seen, some old, but for the most part new, extending along the main trunks of the retinal arteries and veins. Pupils partly dilated and irides sluggish to light. Vision is good.

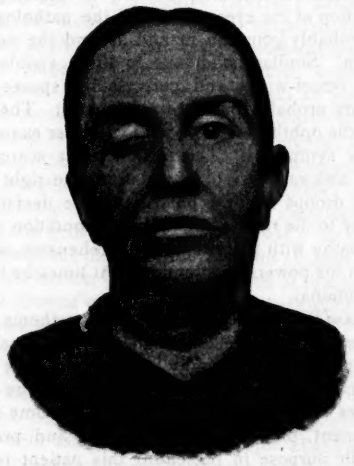
It is probable that this patient has a gumma situated in one of the so-called latent regions of the brain, as, *e.g.*, the right temporal lobe. The growth might be located in the prefrontal region, although the patient does not present with any decisiveness the psychic phenomena of lesions in this locality. He has made great improvement under the use of potassium iodid in large doses.

CASE III. *Mental weakness, epilepsy, and polyuria.*—This patient is introduced simply to show that in typical cases of syphilitic disease a single symptom like polyuria may be the most prominent feature, or there may be one of two or three features in the symptomatology of the case. He has suffered for a long time from polyuria. He has also a clear history of syphilis and of subsequent convulsive seizures. He is 37 years old. He had a chancre in 1881, and four years later had an eruption, probably syphilitic. He has been somewhat weak mentally since 1888. Ordinary happenings do not leave any impression upon him. In 1890 he had a fit for the first time. When first affected he had four or five a week, but at present he averages one every two or three weeks. He bites his tongue in the seizures. He complains of great thirst and voids urine almost every half-hour day and night. In this case some local lesion of the pons may have caused the polyuria, while more diffuse lesions and secondary degeneration have induced the epilepsy and mild dementia.

In a certain rather large percentage of cases of intracranial syphilis, *affections of the cranial nerves* are the chief or only phenomena. In the first place, I say that they are *the chief* phenomena because in not a few of these cases casual observation or close investigation will show that other parts of the encephalon have been attacked by the disease. I have the opportunity of presenting an unusual series of cases illustrating the occurrence of these cranial-nerve affections, either alone or with symptoms showing implication of other regions than the base of the brain. The first case of this series is one in which marked disease of the cortex and of at least one of the cranial nerves is present at the same time. This is a somewhat frequent clinical combination in encephalic syphilis.

CASE IV. *Oculomotor paralysis with evidences of meningeal and cortical disease.*—This patient, M. F., is a woman, 45 years old, who has had no living children, but who has had three stillbirths. Her present illness has been attributed to a sunstroke, and this may well be true, and yet the case be one of intracranial syphilis, for excessive heat, traumatisms, and various other causes may light up the lurking syphilitic fire. On admission she was much deranged and papers were made out to send her to the insane-department, but the mental symptoms clearing up somewhat under specific and sedative treatment, she was admitted to the nervous wards. Her first attack came on with dizziness. About five months before admission she saw double and her right eye was closed by drooping of the upper lid. Just before admission she had a convulsive seizure. Her present condition is one of oculomotor paralysis (Fig. 2), with a slight

FIG. 2.



Right oculomotor paralysis, facial paresis, and meningocortical disease.

paresis of the right side of the face, some hesitation of speech, mild dementia, and a tendency to undue emotionality.

In succession I shall next present a case of third-nerve disease with multiple vascular and meningeal lesions, with the record of the autopsy; a case of paralysis of the abducens and of the iris; a case in which all the cranial nerves from the fifth to the ninth are conjointly involved; and a case in which only the seventh and eighth nerves are implicated. I believe that the origin of each of these cases was syphilis, although it is not possible in at least one of them to obtain a clear history of the infection.

CASE V. *Right oculomotor paralysis with paresis of left leg, and mental symptoms; long apoplectic period preceding death; autopsy showing fibroid meningitis, diffuse endarteritis, multiple thrombosis, and localized softenings.*—I show you now a specimen from a patient who was brought before the class during my lectures last year. She was 29 years old and had a previous history of dissipation. She had had sore throat, an eruption probably syphilitic, and had lost most of her hair. Her clinical history was that of headache; of an attack in which she lost for a time the use of her left leg; and

also of complete right oculomotor paralysis. Later she became irritable, slightly demented and apathetic, and finally stuporous.

Her eyes were carefully examined by Dr. Oliver, who found on the right side complete ptosis, and all movements of the ball lost, except outward movements and a slight rolling motion upward and outward. The appearances presented by this patient with the paralyzed eye closed from the ptosis and held open are shown in Figs. 3

FIG. 3.

Oculomotor paralysis, showing ptosis. The case proved to be one of gummatous meningitis, endarteritis, and thrombosis of the internal carotid. The right third nerve was bound down by exudate.

FIG. 4.

Oculomotor paralysis: the eye held open. Same patient as Fig. 3.

and 4. The pupil of this eye was 4 mm. in diameter and immobile; both optic discs were gray. The patient died after a long apoplectic period in which she was comatose most of the time, and during which she had one slight convulsive seizure. The third-nerve paralysis on the right deepened; on the left the pupil became somewhat contracted and fixed. The following interesting conditions were found at the autopsy: The right internal carotid was free until within 2 or 3 mm. of the point where it penetrated the dura, where a plug, flesh-colored and well organized, was found in the artery. The right postcommunicant was reduced in size and the right precerebral was also very small; the left precerebral was very large, as was also the left postcommunicant. On the right side of the chiasm and the beginning of the optic nerve was a dense mass surrounding the internal carotid, and adherent to the optic nerve and third nerve; the mass lay in the beginning of the fissure of Sylvius, which it fairly obliterated. The left internal carotid also contained a clot about the position at which it joined the precerebral, the medicerebral, and the postcommunicant. The clot also extended into the medi-

FIG. 5.

Drawing showing the lesions present in Case V (illustrated in Figs. 3 and 4); a, right third nerve adherent to fibroid mass; b, right internal carotid plugged by a thrombus; c, fibroid mass filling the Sylvian fossa and extending backward to the crus; d, chiasm; e, left internal carotid containing recently organized thrombus; f, left third nerve; g, left postcommunicant at junction with postcerebral; h, basilar giving off postcerebral.

cerebral artery about half an inch. The cerebellum, pons, and oblongata showed nothing abnormal. The head of the caudatum and lenticula were softened, the material in the softened cavity being liquid and about the color of pus.

Later I expect to have a full report made of the microscopic examination of this specimen. The gross appearances are well indicated in Fig. 5, which is a drawing made by Miss Washington from the actual specimen and from a photograph of it. This specimen shows a localized gummatous meningitis with fibroid change, associated with syphilitic endarteritis, thrombi forming toward the last. The third-nerve paralysis and the paresis of the left leg are readily explained by the lesion extending from the Sylvian fissure to the crus. The softening of the striatum was due to syphilis of the vessels and thrombosis. The disease of the vessels was chronic and not limited to the base of the brain. This case affords a beautiful illustration of a comparatively common form of encephalic syphilis with lesions diverse both in character and position. It is very probable that similiar lesions are present in Case IV.

(To be concluded.)

MEDICAL PROGRESS.

Unsuccessful Esophagostomy for Cicatricial Stricture.—At a recent meeting of the Philadelphia County Medical Society, ROBERTS reported the case of a boy, 3½ years old, who, three months before coming under observation, had swallowed a solution of lye, which resulted in stricture of the esophagus. It was said that a month previously a rubber catheter could be passed through the contracted portion of the gullet. The child was greatly emaciated and very weak. An attempt was made to pass a flexible catheter down the esophagus, but even the smallest was arrested by a constriction at its upper part. A whalebone filiform bougie, such as is used in urethral surgery, was without much difficulty, however, pushed downward and apparently passed through the contracted portion of the tube.

As the child was evidently starving to death, it was determined to operate upon him. At first gastrotomy was considered. The bougie passed down the esophagus from the mouth would, it was thought, enable a strong ligature to be drawn from the stomach upward through the stricture. This would have been used to cut the stricture, as in Abbe's string-saw method. Careful examination of the patient, however, showed that the contraction was situated at a point sufficiently high to enable the esophagus to be opened below it. Accordingly esophagotomy was performed by making an incision along the anterior edge of the left sterno-mastoid muscle. The esophagus was opened a little below the level of the cricoid cartilage and a No. 12 soft-rubber catheter introduced into the stomach. The edges of the esophageal wound were then stitched to the skin and the catheter allowed to remain for the introduction of liquid food into the stomach. There was some difficulty in identifying the esophagus, which was necessarily small; because of the character of the lesion and the position of the thyroid gland. The left lobe of the thyroid gland extended to a higher level than the top of the larynx.

About half an inch above the first esophageal incision a second opening was made into the esophagus above the seat of constriction, and a rubber catheter passed upward into the mouth. Between these two openings the esophageal walls were largely cicatricial. An endeavor was made to dilate or lay open this portion of the tube, but was not successful. The point of a pair of forceps, introduced into what seemed the caliber of the esophagus, when forced upward passed backward behind the wall of the pharynx. The condition of the child was so bad as to render undesirable the prolongation of the etherization in order to lay open or cut away the cicatricial tissue, and it was accordingly determined to postpone further operation until the child could be nourished for a few days through the catheter used to convey liquid food into the stomach. The catheter that had been introduced into the portion of the esophagus above the stricture, and which protruded from the mouth, was withdrawn.

The child was fed on peptonized milk and stimulants in small quantities, but did not seem to rally well. On the tenth day a purpuric spot about four inches in diameter appeared upon the abdomen. This subcutaneous hemorrhage increased, the child became weaker, and died on the sixteenth day. It was impossible to keep the seat of operation aseptic, because food and mucus contaminated the wounded surfaces, notwithstanding the greatest care. Frequent washing of the part with mild antiseptic solutions was therefore maintained. The post-mortem examination showed that about three inches of the esophageal walls were almost entirely destroyed by suppuration. This rendered it difficult to preserve the connection between the upper and lower portions during removal of the specimen. The bodies of the vertebræ at this point were exposed, and the inter-vertebral cartilages loose. Some of them could have been easily removed by picking them out with forceps. The spaces between the loosened cartilages and the bones were filled with dark, foul-smelling pus. There was an area of consolidation about the root of the right lung posteriorly; incision into this portion of the lung showed it to contain material similar in appearance and of the same odor as that in the region of the wound.

Patent Ventricular Septum in a Man of Twenty-nine.—At the last meeting of the American Pediatric Society, JACOBI (*Archives of Pediatrics*, vol. xii, No. 11, p. 835) presented a Russian, twenty-nine years old, who three years previously had been seized suddenly with illness, manifested by dyspnea, palpitation, frequency and feebleness of pulse, and lividity. A loud cardiac murmur was heard whose character could not be made out, and the size of the heart was found to be fairly normal. The patient gave a history of blueness of the lips and nails for a period of twelve or fourteen years. Relief followed the administration of digitalis and later also of potassium iodid. Several attacks of similar character had occurred in the interval. The finger-nails were not only blue but also clubbed, and the toe-nails presented a similar appearance. The superficial veins were prominent but not dilated. Jugular pulse could not be detected. The area of cardiac dulness was little if at all increased. The cardiac impulse was strong. A loud murmur, largely systolic, but partly diastolic, could be heard over and about the ensiform cartilage. A diagnosis was made of tricuspid incompetency, with patent interventricular septum and probably congenital stenosis of the pulmonary artery. The symptoms were again mitigated by means of digitalis and potassium iodid and the murmur became musical in character. Later pulmonary hemorrhages occurred, with transient elevation

of temperature and pain over the left ear. In the further progress of the case supraorbital neuralgia, occasional twitching of the left side of the face, aphasia, paralysis of the right side of the face and of the right hand, and rigidity of the neck were successively noticed. After death the heart was found to be slightly enlarged. The normal pulmonary artery arose from the body of the right ventricle; the conus arteriosus was absent. The caliber of the aorta was small, and the innominate, left carotid, and the subclavians were also small and arose from the ascending aorta. A small artery arose close to the left carotid, proceeding upward and probably representing a vertebral. The left ventricle was small; the right large, with eccentric hypertrophy. The ventricular septum was defective in its upper part, the opening readily admitting two fingers. The foramen ovale was closed. The duct of Botal was not appreciable. The tricuspid valve was much thickened and roughened. There was no evidence of recent disease. The brain was soft on the left side, normal on the right. The posterior horn of the left lateral ventricle contained a quantity of pus, and the cavity communicated with an abscess extending to the upper posterior part of the temporosphenoidal lobe, but not perforating the surface of the brain.

The Transitory Derangement of Consciousness of Epilepsy.—As the result of a study of the derangement of consciousness observed in various epileptic conditions, SIEMERLING (*Berliner klinische Wochenschrift*, 1895, Nos. 42, 43) maintains that a dreamy state of consciousness, rather than total or partial amnesia, constitutes the most significant feature of the epileptic psychoses. Various gradations exist among the individual varieties of the so-called acute and chronic epileptic psychoses. Epileptic or epileptoid conditions and psychoses must be considered as symptomatic of cerebral disease. States of transitory confusion are characterized by the occurrence of apparently orderly, indifferent, and inconspicuous manifestations, side by side with unusual, unexpected actions often of a violent character. Epileptic psychoses are always preceded by epileptic or epileptoid antecedents. Epileptoid conditions are more common than is generally believed, particularly vertiginous attacks. In the absence of epileptic or epileptoid symptoms the diagnosis must be based on other manifestations, such as amnesia, likeness of attacks, peculiarity of conduct, and of hallucinations.

The Surgical Treatment of Infectious Cholangitis and Cholecystitis.—TERRIER (*Progrès Médical*, 1895, No. 43, p. 257) maintains that when the biliary passages are the seat of inflammatory conditions occasioning pronounced febrile manifestations celiotomy is indicated for the purpose of effecting cholecystostomy. By this means the condition of the biliary tract can be determined, calculi present removed, and means of exit for the bile provided.

THERAPEUTIC NOTES.

The Treatment of Pneumonia with Inhalations of Large Doses of Amyl Nitrite.—HAYEM (*Wiener medizin. Blätter*, 1895, No. 43, p. 682) reports the employment of amyl nitrite in large doses by inhalation in the treatment of both pneumonia and pulmonary tuberculosis. The results were more favorable in the former than in the latter condition. Tuberculous patients can inhale the vapor from a suitable receptacle. Pneumonia-patients used compresses, upon which fifteen drops of the pure drug were dropped and the compress held close to the nose and mouth, deep inspirations being made the while. When this quantity has evaporated the amount is repeated again, and perhaps twice or even thrice. In this way fifty drops may be employed in the course of five hours. The physiologic phenomena of flushing, pulsation, pressure, respiratory and circulatory acceleration, cough, dyspnea, etc., soon disappear and leave no bad effects. The treatment is continuous throughout the illness and for a few days beyond defervescence. The dosage must depend upon individual tolerance. Other therapeutic measures are not contraindicated. It is not contended that amyl nitrite thus used shortens the duration of the disease or affects the temperature-curve, although it mitigates the symptoms referable to the lungs. The effect is attributed to an influence upon the pulmonary circulation.

Parachlorphenol for Laryngeal Tuberculosis.—As the outcome of a clinical study, SPENGLER (*Archives des Sciences Biologiques*, T. 4, No. 1, p. 1) has reached the conclusion that parachlorphenol applied directly to the larynx or in a 10 per cent. solution in glycerin in the form of a spray will induce cauterization of tuberculous ulcers, superficial and deep, as well as resorption of tuberculous infiltration, without engendering evidence of irritative reaction. Solutions of parachlorphenol in glycerin have a local anesthetic effect upon tuberculous lesions, lasting for several hours. Parachlorphenol has the advantage over lactic acid and operative measures that it may be employed in all forms and all degrees of laryngeal tuberculosis up to the last hours of life. The drug exerts also a favorable action upon lupus involving the mucous membranes, and may here effect a perfect cure. It possesses most energetic disinfectant activity toward the tubercle-bacillus both in pure culture and in sputum.

Strontium Carbonate as a Dentrifice.—MÉTRAL (*Bull. Gén. de Thérap.*, October 30, 1895, p. 360) speaks highly of the use of strontium carbonate as a dentrifice. He has employed the following formulæ:

Strontium carbonate Flowers of sulphur	āā	ʒiv.
Essence of rose		gtt. vj.—M.

To be triturated and used as a powder.

Strontium carbonate	ʒiss.
Flowers of sulphur	gr. xlv.
Medicinal soap	ʒviss.
Essence of rose	gtt. vj.

Mucilage of gum arabic and glycerin sufficient to make a paste.

For Chronic Eczema.—

℞.—Liquor carbonis detergent.	♏xx.
Hydrarg. ammoniat	gr. xx.
Ung. zinci oxidi	f ʒss.
Vaselin.	f ʒss.—M.

S.—Apply topically.

—*Practitioner*, vol. lx, No. 5.

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UNLICENSED ANTIVIVISECTION.

IT appears evident to us that vivisection, and with it some of the best interests of scientific medicine, are now running one of the peculiar risks that arise from the constitution of modern society—the appeal to public opinion. This is always the last resort of those whose reasons are not so strong as their passions and prejudices; whose native wits are more at home in controversy than in discussion; and whose consciences, apparently, must have a million keepers.

The latest acute phase of the vivisection-question cropped out at Minneapolis at the recent meeting of the American Humane Association. The position taken there was noteworthy for two reasons: because, first, it exhibited a bad method; and because, second, it ignored the true ethical question involved.

We think that the method adopted by Dr. Leffingwell and by the special committee was bad because its aim was to appeal this question to popular prejudice. Their tone, and, in fact, their exact language, conveyed a threat which was intended to intimidate their opponents by holding up to them the bogie of social tyranny. Dr. Leffingwell's paper and the committee's report have both reached us through the columns of a daily newspaper, to which they were telegraphed in full from the scene of the meeting. The paper itself is a not very brilliant example of special pleading. In diplomatic language it gives the lie to a committee of Harvard professors, whose names and work are well known in all the scientific world. Dr. Leffingwell is not content to attempt to refute men who in their special fields are eminently able to take care of themselves; therefore, he charges them directly with falsehood. The merits of this style of warfare are generally well understood. The body of the paper is composed of disjointed quotations from scientific reports, each quotation seldom more than a few lines in length, embodying merely some technical description of a vivisection-experiment. The object of the experiment, the care and conscientiousness with which it was done in each instance, and the results obtained, can, of course, be in nowise determined from such garbled and mutilated data. The whole object is simply to bring out in bold relief some of the more or less shocking features of the experiments. This is not done for the benefit of scientific men, because such men would pay no heed to such unfair presentations of experiments; but it is done too evidently in order to catch the eye and harrow up the sensibilities of lay readers. The paper, in our judgment, is a very strong argument, not against vivisection, as its writer intended, but against making the question an instrument for popular agitation.

We have made these strictures deliberately and in spite of the fact that the Committee's report embodies the results of an appeal to two-thousand physicians, clergymen, writers, and educators in the States of New York and Massachusetts. This appeal does not alter the fact for us, that the obvious intention is to catch the popular eye and to win popular favor. About the personality of these two-thousand individuals we have but limited means of knowing anything, and about their special fitness for forming a judgment on the subject of vivisection we know but little. But, taking even physicians at large, we need only point out the fact that the large majority of them have absolutely no practical acquaintance with the methods of, and even with the necessity for, vivisection. It is even a well-known fact that some physicians bitterly oppose vivisection with all the prejudice of professed agitators. The opinion of one specialist—like Pasteur, or Ferrier, or Welch—is worth more than the opinions of all the

average respectable practitioners, "of fifteen years' experience," in New York or Massachusetts. To attempt to settle such a scientific question by merely counting noses is trivial. Unfortunately, it is not without precedent that members of the medical profession have opposed scientific progress. The use of anesthesia in obstetrics was opposed, and its introduction delayed, by eminent professors in Philadelphia, one of whom gravely argued that it would defeat the scriptural plan, according to which women should bear children in agony. Even to-day physicians are found who deny the very existence of hydrophobia or the infectiousness of tubercle.

As for our friends, the clergy, although on the whole they have given some very sensible answers, it is not to them as a body that we look for light to illumine the pathway of science. And as for educators and writers, they are of all known species and varieties. What particular varieties of them were appealed to by the Humane Committee, and how much they know about the needs of modern scientific medicine, in no way appears.

It may be worth while to note, however, that the answers obtained by the Committee were on the whole favorable to vivisection under certain conditions and restrictions. While we do not attach much importance to these results, it is but fair to say that in the main they exhibit a degree of enlightenment that is encouraging to scientists and must be discouraging to the antivivisectionists. The vast majority of the replies are against the total abolition of this necessary adjunct to science.

We should note also that Dr. Leffingwell himself disclaims that he is an antivivisectionist. His methods and spirit, however, are such that we doubt not that the antivivisectionists will have no difficulty in recognizing him as one of their own.

The futility of an appeal to public opinion for the settlement of such a strictly scientific subject is clearly shown in the replies obtained by the Humane Committee. The majority of these replies are in favor of "vivisection when restricted by utility" and "vivisection when without pain." These expressions are in fact euphemistic. They are well-intended, no doubt, and indicate a disposition in those who use them to be liberal-minded; but practically they offer no solution for the difficulties and objectionable features of vivisection. The utility of an experiment can be determined alone by the investigator and by critics trained in his own special field—not by clergymen, writers, and educators, or even by the average physician. Vivisection without pain is, we fear, an ideal far yet from attainment. It is folly for scientists to claim that it is yet practicable in all cases. Such a claim puts them in a false position, of which their opponents take immediate advantage, as shown in Dr. Leffingwell's paper. It raises a standard to which the scientist cannot attain, but by which agitators and fanatics will aim to control him. It is better to acknowledge that vivisection means pain in many instances, and to claim that the degree of this must be left to the humanity and skill of the operator. It cannot be measured out by public opinion. The question of the right to inflict pain is included in the larger ethical question of the right to take animal life.

The impractical note in the report of the committee comes out still more clearly in its recommendation that this humane association by its local societies should demand the right to enter every laboratory and witness the experiments in vivisection. The main objection to this is not in the inconvenience to and interference with scientific workers that it entails, but in the recognition of the right of irresponsible persons, without special training or fitness, most of whom have already imbibed and even expressed a prejudice against vivisection, assuming to themselves inquisitorial duties, and arrogating to themselves the privilege of sitting in judgment for the public benefit upon the thing which they have already condemned. We do not presume to speak for all the experimental scientists of this country, but, if they shall agree to this proposition, we can only say that they will exhibit a degree of kindness and amiability that would fit them pre-eminently for the trying work of vivisection. The best work even in our hospitals could not endure such a test of ignorance without grave risk of misrepresentation and defeat.

The true ethical question that is involved in vivisection is practically ignored in the paper and report from Minneapolis. It has been stated so often that it can gain nothing from being stated again, and yet in this connection it can never be stated too frequently. We observe, by the way, a rather uniform reticence on this question by those who oppose vivisection. They either ignore it as beneath them or they studiously avoid it as too far above them, we know not which. This question, in brief, is that of the right of mankind, who claim and constantly exercise the right to chase, trap, catch, maim, and slaughter all forms of animal life

for sport, for food, for clothing, or for avoiding nuisances; also to use animal life for the demonstration of scientific truths. We are content here, without discussion, to state merely our belief that the one right is inseparable from the other.

Of the immense importance, nay absolute necessity, of vivisection for the progress of medical science there can be no question. Obstructionists, who, like Dr. Leffingwell, minimize the results obtained (as in the treatment of tetanus), present a mental attitude which is simply fatal to all progress. Such obstructionists have stood to oppose every inch of progress, not only in the scientific but in the political and religious world. For them one objection is magnified so as to obstruct their mental horizon in all directions. They are mentally and morally myopic.

The position assumed by this journal has always been in favor of proper legal restrictions upon the practice of vivisection. We doubt, for instance, its utility, or its desirability, for general didactic purposes. We are content, however, to leave the control of this question, in all its difficult details, to the proper law-making powers, guided by the advice and experience of experts who are qualified to state and to demonstrate the needs of their respective specialties. We do not believe that it can or should be settled by popular agitation or by an appeal to "clergymen, educators, and writers," or even to a general vote of the medical profession; although of the result of the last there can be no doubt.

A QUESTION OF CONSCIENCE.

DR. ARABELLA KENEALY, a woman-doctor—or, more accurately, a female physician—has popped a question of conscience into the masculine ear of the British practitioner which has stirred up quite a lot of the moral instincts for which the insular branch of the Anglo-Saxon race is noted. This question is a syphilitic one—or, to be more elegant, it is a question pertaining to syphilis. Dr. Kenealy shows plainly that she thinks that she is well grounded in the gospel of syphilis; and her child-like faith in the prevalent doctrines of the syphilographers is much better schooled than is her moral sense as a plain British subject. It seems that this question took its rise in a crisis in Dr. Kenealy's professional life which was about as follows:

The doctor was called to see "the wreck of a young woman" who was threatened with an abortion. The threatened abortion was, or would be, the sixth. Only one child had been born living to the patient, and this child was "typical," *i. e.*, syphilitic. The doctor, retiring to the library to write a prescription for a mercurial that was sagely intended to check the abortion, encountered this unhealthy child in an interview which was almost as long as a column of the *British Medical Journal*, in which the adventure is told. So impressed was she with the undesirability of adding another such child to that household that she rashly tore up her prescription and decided, not in this exact language, but yet literally, to let Nature rip. Dr. Kenealy's acquaintance with Nature in all her moods—especially her destructive mood toward all things syphilitic—is not the least remarkable of her accomplishments. "Nature," for Dr. Kenealy, is a distinct personality, aflame with a divine wrath against syphilis and syphilographers and syphilotherapeutists—Nature, she says, "is abhorrent of syphilis, and, in a spasm of anger, thrusts the abhorred thing from out of its mother's womb." Hence for Dr. Kenealy to give mercury in order to abort an abortion, and to save a small life "from rushing headlong into a sphere for which it was not yet equipped," was unnatural, sophistic, and diabolic. Acting, therefore, on this cue from Nature, Dr. Kenealy, apparently without even taking farewell of her patient, left the library and went home thinking.

The subsequent history of the patient and her embryo is not given; but Dr. Kenealy, like every true Briton who has a grievance, or else because her conscience did not preserve its equilibrium, rushed into print to invoke the aid of her older colleagues in solving this "problem of intricate differentiation." One would think that the proper place to solve this problem would have been at the patient's bedside instead of in the columns of our esteemed contemporary; but leaving this thought aside, especially as we have not had an opportunity to reach the patient's bedside, and would probably now be too late, let us enter briefly into consultation even at this inconvenient time and distance.

First, let us note and commend Dr. Kenealy's optimism in obstetrics. Her patient was in such a risky condition from a threatened abortion that she had been obliged to have the "foot of her bed raised" and to sip "iced lemon-water." These heroic remedies (which apparently are more serviceable in Britain than they are in America) were supplemented by Dr. Kenealy in ways not men-

tioned; neither are the patient's symptoms described. Nevertheless, the danger being temporarily averted, the doctor turned confidently to mercury as a reliable remedy to complete the cure—to clinch the embryo, as it were, anew. This is a power that we confess we did not know that mercury has. When the embryo, already four months developed, is almost thrown off, and the mother, with the foot of her bed elevated, has to sip iced lemon-water, we should not have supposed that mercury, even in the hands of a syphilographer, would have the power or the time so to renovate embryonal and placental tissue as to render a further mishap impossible. It seems to us that Dr. Kenealy has given herself useless concern about this matter. Her casuistry is as far astray as her therapeutics. If mercury has not the power that Dr. Kenealy attributes to it, we should say that her conscience has bled in vain.

But the question raised by Dr. Kenealy is one of casuistry, not of therapeutics. The doctor had, according to her own innocent belief, an infallible remedy in mercury against a half-finished abortion. There was no doubt about that. She wrote the prescription for it in the library. The question for her simply was, Should she use this infallible remedy? Dr. Kenealy decided not—and there she made a fatal error which neither her candor nor her rhetoric can condone. In the midst of all her confusion of thought as to the action of mercury, the pathology of embryonal syphilis, the causation of Mongolian idiocy, the importance of iced lemon-water in abortion, and the personal likes and dislikes of her tutelary goddess "Nature;" in the midst of all these there stands out clearly the glaring sin of omission of which Dr. Kenealy was guilty. For we hold it to be an axiom of medical ethics that the physician ought never to withhold a remedy, unless for the patient's good. It is not for him, or her, to judge the mystery that lies in the untold future; to cast a horoscope for the unborn infant and to condemn it to infamy under the sign of Mercury!

For, we ask, what guarantee had Dr. Kenealy that this particular infant could not be saved and made healthy and useful? What were the wishes of this embryo's parents on the subject? They were not even asked. The father, in fact, does not appear on the scene. It was probably lucky for him that he did not meet Dr. Kenealy. Have no syphilitic children ever survived and flourished? In fact, what evidence had the doctor that this child *was* syphilitic? She gives but little. A succession of abortions is not a sufficient evidence of syphilis to justify a physician in snapping his fingers at a poor imperilled embryo and bidding it go the way of its predecessors. If Dr. Kenealy's logic is followed to its just conclusion, the penalty for all syphilis will soon be death—and not confined to the embryo. Dr. Kenealy will not only expose suspected children on the mountain-tops, but she will be exterminating their fathers and mothers in the market-places, if she is not checked.

With reference to Mongolian idiocy also Dr. Kenealy has rather bold and original ideas. She tells us that the effect of syphilis is to retard evolution in such a way that from Caucasian parents an offspring characteristically Mongolian results. We did not know before that Mongolian idiocy was subject to such a sweeping elucidation. In this exceedingly rare type of idiocy the "Mongolian" feature is but a superficial resemblance; the child is still a Caucasian, not a "maimed Mongolian." And to what extent this type is due to syphilis is still, as in the case of all idiocy, a somewhat obscure question.

We fear that Dr. Kenealy may find the practice of obstetrics too much involved in casuistry to permit her to become a good midwife, and we suggest that she try some other branch of medical science—for instance, pathology.

EDITORIAL COMMENTS.

Phonography in Medicine.—We have on several occasions referred to the utility to medical men of a knowledge of phonography and its practical application to the exigencies of a busy and active existence. Many of these points, and others as well, are brought out clearly and forcibly in an interesting address recently delivered by the distinguished neurologist, Dr. W. R. Gowers, before the Society of Medical Phonographers, and reprinted in the *British Medical Journal* of October 5, 1895. The Society was organized in December, 1894, with a membership of 60, which by September, 1895, had increased to 175, and it issues a monthly journal containing in shorthand reports of clinical lectures, original articles, and the like. In the course of his address Dr. Gowers pointed out that the current method of writing is not only cumbersome but laborious. Every movement of speech requires for its representation several different movements of the hand. Writing can be made easy and simple by having the movements of the hand that symbolize each movement of speech and its resulting sound the fewest compatible with secure and ready perception by the eye. This is the fundamental basis of shorthand. Written records form an important factor in medical

advance, and much time can be saved, much expenditure of energy spared, and fuller as well as more careful observation made possible by the adoption of means that simplify this process and render its execution easier. The use of shorthand is not restricted to the making of records, but it may be applied to all the purposes for which ordinary writing is employed. Especially useful to the student is the art of phonography. By this means he can make a perfect epitome of his lectures, and at the same time keep his mind engaged upon the subject in hand. It were best if the knowledge of shorthand were acquired before entrance upon the medical education, and Dr. Gowers proposes that shorthand should be an extra mark-bearing subject in the preliminary examinations. He does not believe that the practice of making shorthand-notes has a deleterious influence upon the faculty of memory, but holds rather that, properly used, shorthand involves the retention of a greater amount of knowledge by the memory.

A Hahnemann Statue.—An esteemed contemporary remarks that "Germany has never ventured to erect a statue to Hahnemann." Literally speaking this is true, yet there is in Germany a statue to the man who discovered "the inner, monstrous, chronic miasm—psora, the only true fundamental cause and producer of innumerable diseases which figure under the names of hysteria, rachitis, scoliosis, cancer, jaundice, amenorrhea, hemoptysis, asthma, impotence, migraine, deafness, cataract, etc." (*Organon der Heilkunst*, Section 80. This work, be it remembered, is still used as a text-book in homeopathic medical schools.) Our contemporary has evidently never encountered in his wanderings abroad, a life-size, bronze statue "to the memory of Samuel Hahnemann." It is placed in an inconspicuous corner in Leipsic and is considered a good representation of the great potentizer. With reference to the position of the figure a Viennese wit propounded a rather neat conundrum: "Warum sitzt Hahnemann?" Answer: "Weil er für die Homeopathie nicht stehen kann."

As to the success of the Hahnemannians in raising money for their statue in America, there is one aspect of the matter not sufficiently emphasized. Both the monument and the money-raising are made a standing advertisement. The honor or principle involved is purely figurative or assumed.

Medical Education.—The following certificate was sent a railway company by a legally qualified physician:

July 31, 1895.

Owing to the request of the —— Company I hereby certify, that I found Mr. —— several years ago in a dying condition in the office, suffering from an ulcer and chronic catarrh of the stomach. Since that time I attended Mr. —— for catarrh of the stomach, the bowels and the liver, and rheumatism of the joints. Last October the blood was so bad that he lost his memory, and his sight was so impaired that he saw everything on 2 different places; this condition of the brain ceased as soon as I cured his kidney-trouble! These diseases are not due to alcoholic use, he did not drink liquors in all the time I attended him, as this caused a rushing of blood to the brain.

Epistaxis through the Eyes.—Dr. M. A. Veeder, of Lyons, N. Y., writes that he has lately had a case of epistaxis in which, as soon as the lower part of the nostrils had been plugged by the aid of cotton and astringents, the blood found its way into both eyes by the lacrimal ducts and continued to flow quite profusely for nearly half an hour, trickling down over both cheeks in quite a stream at times. Have similar cases been met in practice?

Zoolatry is a new word coined by an English Jesuit professor to describe the attitude of certain antivivisectionists, and "which," in the opinion of the *British Medical Journal*, "exactly expresses the state of mind of the antivivisection fanatic, who makes the feelings of animals the object of a tender regard which he is far from showing for those of men."

NEWS ITEMS.

The Revival of the Index Medicus.—The following additional subscribers are announced by the Philadelphia Committee for the revival of the *Index Medicus*:

Dr. William S. Halsted, Baltimore.
Medical Exchange Club, Chicago.
Dr. John E. Owens, Chicago.
Dr. O. L. Schmidt, Chicago.
Dr. F. Forchheimer, Cincinnati.
Cleveland Medical Society.
Sir T. Grainger Stewart, Edinburgh.
Free Public Library, Newark, N. J.
Philadelphia Neurological Society.
Dr. Lewis S. Somers, Philadelphia.
Reynolds Library, Rochester.
Dr. S. C. Busey, Washington, D. C.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one-hundred-and-eighty dollars, will be made on July 14, 1896, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but must not have been published, and must be received by Dr. Charles W. Dulles, the Secretary of the College, on or before May 1, 1896.

Each essay must be sent without signature, but must be plainly marked with a motto, and be accompanied by a sealed envelop having on its outside the motto of the paper and within it the name and address of the author.

It is a condition of the competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

Dr. Francis Peyre Porcher, LL.D., a well-known physician and botanist, died at Charleston, S. C., on November 19th. He was at one time Professor of Materia Medica and Therapeutics in the South Carolina Medical College, and was the author of *Resources of the Southern Fields and Forests, Medical, Economical, and Agricultural.*

Dr. J. Abbott Cantrell has been appointed Dermatologist to the Frederick Douglass Memorial Hospital.